THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 87. NEW YORK, SATURDAY, AUGUST 19, 1905. No. 8.

ORIGINAL ARTICLES.

SPHYGMOGRAMS FROM TWO CASES OF BRADYCARDIA.

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COMPARATIVELY few tracings have been published from cases of bradycardia. Even reports of such cases are not always convincing, because pains are not always taken to show that the heart beat is really infrequent. In a very recent report the pulse suddenly dropped to about half its former rate. As the heart beat is not described, nor the sounds mentioned, there is reason for thinking this was a case of alternating pulse (postoperative), a very different condition from bradycardia. Besides noting the rate of the heart beat, and the character of the sounds, it is essential to take tracings of the pulse, and also simultaneous tracings of the apex beat as well as the venous pulse. In the cases now reported it was not possible to get cardiograms or tracings of the venous pulse, but the sphygmograms of the radials seem of sufficient interest to excuse this and other unavoidable imperfections.

Case I.—Pulse about 30 for six years; in the last two years attacks of loss of consciousness; sudden death. C., farmer, aged sixty-three years. Health good up to four years ago, when there was an attack resembling influenza. At this time the pulse was found to be 28; the skin was cold. Various remedies were used but the pulse never exceeded 30. The general health became fairly good, but shortness of breath remained. There was impotence for a time. Convulsions were not observed at any time.

I saw the patient once only, June 24, 1902, with his physician, Dr. James Hueston, of Ypsilanti. He was a man of large frame. The heart was slightly enlarged, the apex beat strong; there was a diastolic murmur over the midsternum. The peripheral arteries were only moderately sclerotic. Radial pulse of medium size and fulness; wave well sustained but diastole long; 28; regular, following the heart beats with perfect regularity. There were no unusual pulsations in the neck. No capillary pulse. The other organs and the urine were negative. I made a diagnosis of probable Stokes-Adams' disease (the paroxysmal features of which, however, were not explained to the patient) and advised a course of atropine, partly in order to determine its effect on the pulse rate. This was given in full doses by Dr. Hueston, who never, however, found the pulse above 32.

Soon after my examination the patient began to have attacks of loss of consciousness, falling suddenly at long intervals. The unconsciousness lasted three to four minutes. Some attacks followed exertion, others not. The final attack came on while picking fruit. The man fell down and was found almost at once to be dead. I often heard of him from Dr. Hueston in the meantime and he made many promises to come for examination, but never did, and as he lived some distance in the country I never found it possible to see him. I was fortunate enough to make an autopsy with Dr. Hueston. There was moderate arteriosclerosis, with very slight corresponding changes in the liver, kidneys and spleen. The kidneys were granular but the microscopical alterations were relatively slight, with the exception of some minute old infarcts and recent hemorrhages. The vessels of the brain were not unusually sclerotic for a man of his age. The cerebellum, pons and medulla showed no macroscopic changes. Sections of the medulla at the level of the vagus center show a slight diffuse increase of neuroglia, but the vessels and the nerve cells are not perceptibly altered.

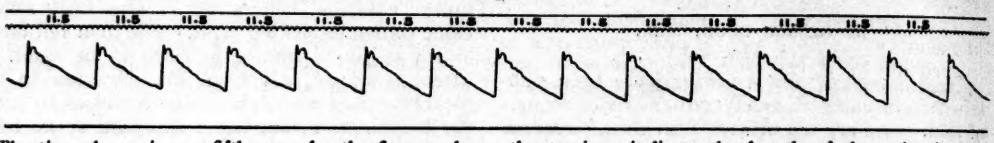
The heart, weighing 500 grams, is slightly hypertrophied, shows only mild fibroid changes in the walls. The left auricle is thickened and fibroid, the right auricle shows slight separation of the muscular bundles. The auricular appendages are not affected. Microscopically the muscle fibers are well preserved, with no fragmentation. Both auriculoventricular orifices are slightly dilated. The aortic valves are slightly thickened and retracted. The aorta at the level of the coronaries is moderately sclerotic, but the coronaries from their orifices down show very little sclerosis without nodular thickening, retraction or dilatation. The sphygmogram (see Fig. 1) shows a shallow notch below the summit due to a slight exaggeration of the ventricular systolic wave, but the dicrotic wave is often very low. The chief feature is the slow rate, equal to 26.5 beats per minute, with a great regularity in the duration of each pulsation (11.5 fifths of a second), as well as in the height of the stroke. Several long tracings were taken, and all show the same details.

Case II.—Dyspnea, pain, palpitation of the heart; bradycardia (15 to 30) and arhythmia. A. D., farmer, aged sixty years, seen with Dr. J. L. Ramsdell, of Albion, March 19, 1904. The patient was strong and muscular, and never ill until about one year before. He then began to have dyspnea on exertion, very slight pain, palpitation of the heart; no anginal symptoms. Dr. Ramsdell saw the patient four days before my

visit and found the pulse 25. He then gave strychnine. A few hours before I saw the patient Dr. Ramsdell found a rate of 15.

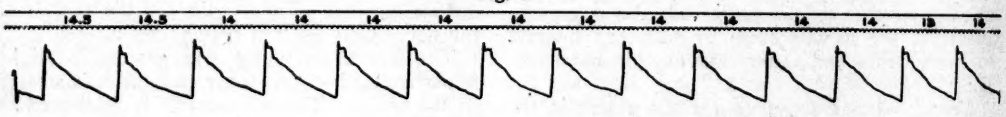
I found the patient spare, well preserved, but arteriosclerotic looking. I noted: "The apex beat is in the nipple line, in the fifth intercostal space. Dulness begins in the third interspace, extends to the nipple line, on the sixth rib, and to the left edge of the sternum. At the apex the sounds are weak and there is a short systolic murmur conducted about one inch in various directions. This is followed by a soft diastolic murmur. The action is irregular. Sometimes the beat is very slow but regular, sometimes one or two beats follow a stronger one, but without regularity. The radial artery is of moderate size, the vessel tortuous, irregularly thickened; the pulse of moderate size, irregular, 25 to the minute. Usually there is a long pause, sometimes the pulse is followed by two weaker beats in rapid succession corresponding exactly to the heart sounds. There is no venous pulse. Blood pressure (Riva-Rocci after Cook, 5 cm. band), 185. Extremities warm, no edema. Has had tendency to cold skin all winter. The urine is negative. There are no brain or eye symptoms."

Fig. 1.



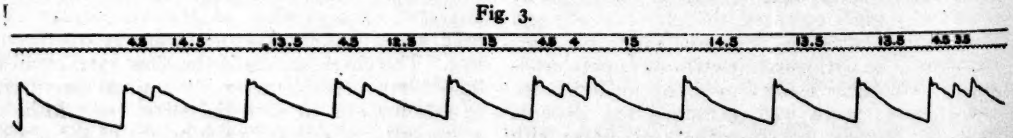
The time shown in one-fifth seconds; the figures above the tracings indicate the length of the pulse in this same fraction.

Fig. 2.



The time shown in one-fifth seconds; the figures above the tracings indicate the length of the pulse in this same fraction.

Fig. 3.



The time shown in one-fifth seconds; the figures above the tracings indicate the length of the pulse in this same fraction.

The tracings taken at this time illustrate the cardiac and pulse rhythm. Usually there is slow pulse, with intervals of about three seconds. Without obvious cause this changes to a very irregular pulse, or sometimes a regular irregularity, with intervals of from less than one second to five seconds or more. Both of these are shown in tracings, Figs. 2, 3, and 3*a*. The waves with short intervals are always weaker than the long ones. Sometimes two waves follow a long pause and then the second pause is shorter than the first, but followed by a higher wave.

I made a diagnosis of arteriosclerosis with myocardial degeneration, and advised treatment with nitroglycerin, atropine and strychnine. There was no distinct change in the subjective and general condition after that, and no notable increase of the pulse rate.

April 9, Drs. R. S. Morris and C. E. Edmunds kindly saw the patient for me and made some observations. The general condition was about the same as before. "The apex beat 1½ to 2 cm. wide in the fourth intercostal space outside the nipple line. Dulness from the third interspace to the nipple line and the left edge of the sternum. The first sound at the apex weak, accompanied by a soft short murmur, transmitted about one inch upward and to the left, also toward the base. The second sound at the apex is strong and clear. The diastolic pause is very long. At the second right interspace the sounds are almost inaudible, also at the level of the third costal cartilage over the sternum. In this area the systolic murmur can also be heard, and followed up to the right sternoclavicular articulation, but not to the left.

"The peripheral arteries show marked sclerosis. Radial pulse 24 at first, later 30, but regular. The blood pressure (Cook), 176; Erlanger, systolic 162, diastolic, 105 to 110. One mg. of atropine was injected but no change of the pulse rate followed. The patient had taken 1/150

grain atropine t.i.d. The pupils were wide in the beginning of the examination and did not become larger in the subsequent forty-five minutes of observation."

Tracings taken at this time show (Fig. 4) a pulse of almost perfect regularity beating at the rate of 24.4 per minute. The patient died a few weeks after this, without any distinct change in his pulse conditions. An autopsy was not permitted.

These two cases have a relationship chiefly in the slow pulse. I think the first one should be classed among cases of Stokes-Adams' disease, though not a typical case. The slight retraction of the aortic valves does not seem to have been of much importance.

In the second case there were no Stokes-Adams symptoms, though these might have developed if the patient had lived longer. In this case the peripheral arteriosclerosis was more marked than that in any part of the body of Case I, but was no greater than occurs in many cases that never have bradycardia, Stokes-Adams symptoms or other unusual circulatory changes.

Both are cases of true bradycardia in that the heart beat had the same rate as the very infrequent pulse. Both failed to react to atropine in full doses. This makes unlikely a principal participation of the vagus center or trunk, which is also rendered unlikely in Case I by the very long duration.

Aside from a vagus cause, the bradycardia might arise from: Diminished automatic excitability; lowering of conductivity or lessened contractility, or a combination of these.

Inasmuch as digitalis sometimes causes slow pulse by a toxic action on the heart muscle, I should say that in neither case was it given in such a dose as to produce an effect.

The regularity of the wave, the absence of signs of intermission in the tracing and of venous or cardiac signs on inspection and auscultation make it probable the slow pulse in Case I was due to lowered automatic excitability. The same may be said the regular curves in Case II. The irregular part in the latter case offers some interesting suggestions. There is a marked indication of "Luciani's periods" in the small waves, a disturbance of rhythm that occurs in certain disturbances of stimulus conduction in the heart muscle and capable of artificial production by asphyxia. In the patient, however, notwithstanding the great disturbance of the pulse at that time, there were no evidences of asphyxia, even with intervals of 3 to 5½ seconds between the heart beats. This condition, however, probably did not continue very long.

Fig. 3a.

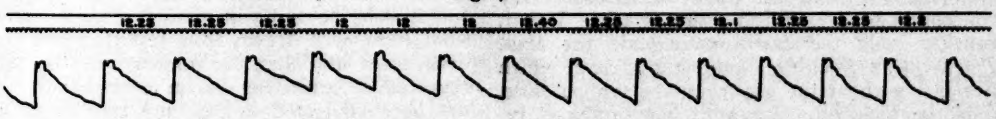
The time shown in one-fifth seconds; the figures above the tracings indicate the length of the pulse in this same fraction.

Another possible explanation of the arhythmia is that the long waves are due to intermission, the shorter ones showing the true rhythm; but the duration of the waves, as shown by the time marker, makes this unlikely, while the clinical evidence, again, was opposed to this view. The two long waves in Fig 3a suggest missed beats, but in ausculting at other times with waves of five seconds' duration I could detect no marked contractions.

The same sort of evidence negatives the supposition of "heart block," which might produce a tracing not unlike Fig. 3. A disturbance of contractility, or a negative inotropic action, might be supposed to be at work in both cases, but our knowledge of such disturbances in the human heart is too fragmentary at present to apply it to this case. Further experimental work and more thorough clinical investigation are much needed in this most interesting branch of cardial pathology.[1]

I should add that my friend and former colleague, Dr. A. R. Cushny, who has studied the tracings, also concludes that the chief element was diminution of automatic excitability in both cases.

Fig. 4.



The time shown in one-fifth seconds; the figures above the tracings indicate the length of the pulse in this same fraction.

1 See especially "Arhthymia of the Heart, a Physiological and Clinical Study," by Dr. K. F. Wenckebach, translated by Thos. Snowball, M.A., M.B., Edinburgh and London, 1904.

ON THE IMPOSSIBILITY OF DIFFERENTIATING SO-CALLED "PARATYPHOID" FROM TYPHOID FEVER EXCEPT BY A BACTERIOLOGICAL EXAMINATION OF THE BLOOD.*

BY WARREN COLEMAN, M.D.,
OF NEW YORK.

IF cases of infection by intermediate members of the typhoid-colon group of bacilli, when pursuing a typhoidal course, cannot be distinguished from typhoid fever without the aid of laboratory methods, the introduction of the term "paratyphoid fever" is clearly unjustifiable. I shall endeavor to prove that so-called paratyphoid and typhoid fever are identical clinically and that they can be differentiated only by the recovery of the bacillus concerned from the blood.

Schottmüller introduced the term paratyphoid fever in 1901. In 1902, in a paper entitled "Types of Infection Produced in Man by Intermediate Members of the Typhoid-Colon Group of Bacilli," [1] I took the ground "that paratyphoid infections do not constitute a clinical entity; that there is as great diversity among the different types of typhoid fever, as between typhoid fever and paratyphoid infections; that the idea of the specificity of typhoid fever should be abandoned, and that the scope of its etiology should be broadened to include *Bacillus alkaligenes fæcalis, Bacillus typhosus, Bacillus paratyphosus* and certain members of the paracolon group." At the time this paper was written only about fifty cases of paratyphoid infection had been published. As the number of cases has increased and the subject has become better known, I have not only seen no reason to modify the above view, but have become more thoroughly convinced of its correctness.

A brief review of the bacilli constituting the typhoid-colon group will enable me to explain my conception of the subject more clearly. I shall consider only the bacilli pathogenic for man. Petruschky's *Bacillus alkaligenes fæcalis*, which lies just without the group on the typhoid side, must be included, because it has produced typhoidal symptoms. The other members of the group are *Bacillus typhosus*, the paratyphoid bacilli which are not identical either in biological or serum reactions, the paracolon bacilli, which likewise differ among themselves, *Bacillus enteritidis*, consisting of different strains, *Bacillus psittacosis* and *Bacillus coli communis*.

All of these bacilli have produced diseases characterized by typhoidal symptoms, with the possible exception of *Bacillus coli communis*. I grant at once that infections by these different organisms are distinct diseases *from the bacteriologist's standpoint*. But bacteriological are not necessarily clinical entities. Pneumonia and infective endocarditis are examples. Further, if clinical distinctions are to be made on the basis of biological differences in organisms, we must be consistent and give a name to each subvariety of infection. It needs but a moment's reflection to see where this policy would lead us in the typhoid-colon infections.

The pathological anatomy of the cases of infection by the intermediates which have come to autopsy has differed from that of typhoid fever. Peyer's patches have escaped, though four of six cases showed intestinal ulcers. What the ultimate significance of these facts will be, I think no one can tell. But since the number of cases studied is so small, it will clearly be wiser not to draw conclusions from them.

The Clinical Diagnosis of Typhoid Fever and Paratyphoid Infections: Twenty-one-Day Cases.—A positive clinical diagnosis of even a typical case of typhoid fever is beset with difficulty and is generally made after the fact. No case is typical, until the disease has finished its course. More than once has general miliary tuberculosis been mistaken for typhoid fever. (I do not, of course, refer to the probable diagnosis of the usual case. We are dealing with *exact*, not probable, diagnosis.)

Some of the reported cases of paratyphoid infection have been described as typical attacks of typhoid fever. Some have been mild, some severe. Among them they have presented all the symptoms and many of the complications of typhoid fever. There has been no symptom of typhoid fever constantly absent. There has been no symptom constantly present that we may not get in typhoid fever. All that the most ardent advocates of the use of the term "paratyphoid fever" claim for it as a distinct disease is, that the cases are milder, that they are of shorter duration (I shall consider the cases of less than twenty-one days' duration later), that the mortality is lower, and that some complications, *e.g.*, myositis and purulent arthritis, are more frequent. But it must be borne in mind that these conclusions have been drawn from less than two hundred cases and that the majority of the cases reported as infections by an intermediate have not been subjected to the only final diagnostic criterion—the recovery of the bacillus from the blood. But even admitting that all the cases reported as such were infections by intermediates, I claim that one would find as many statistical discrepancies among an equal number of cases of typhoid fever taken at random.

My personal experience is limited to one case. But that case passed for a typical, mild case of typhoid fever, until Buxton found that the bacillus we had isolated from the blood, gave the cultural reactions of paratyphoid bacilli.

Short-Duration Cases.—If the *final* diagnosis of a typical case of typhoid fever is difficult, what shall be said of the diagnosis of the irregular cases? Witness the former elaborate discussions on "simple continued fever." I have no hesitation in saying that I believe the majority of these cases to have been caused by some member of the typhoid-colon group of bacilli. The time has

* Read at a meeting of the Section on Medicine, New York Academy of Medicine, April 18, 1905.

even come when we must take into consideration the possibility of the occurrence of primary systemic infection by the colon bacillus itself. The literature upon the subject is slowly accumulating. Buxton and I have had one case which did not give the typhoid serum-reaction, and from the patient's blood we isolated *Bacillus coli communis* in pure culture.

The argument that the cases of so-called "paratyphoid fever" have been of shorter duration than typhoid will not serve to distinguish them clinically. During the past summer I have had ample proof of this at Bellevue Hospital. I do not recall having seen in any one season so many cases of short duration, and otherwise irregular, typhoid. The diagnosis in some of them was placed beyond dispute by the recovery of typical typhoid bacilli from their blood. One lasted ten days, another fourteen, and their symptoms corresponded perfectly with those of some of the reported cases of "paratyphoid fever." These cases show, then, that short duration is not distinctive of infections by the intermediates.

Serum Reaction.—By way of differentiation, certain authors have attributed much diagnostic significance to absence of the serum reaction against *Bacillus typhosus*. Even positive diagnoses of paratyphoid infections have been made upon such negative evidence. But a negative serum reaction in a case of suspected infection by some member of the typhoid-colon group means one thing only—that the agglutinins have not developed, or at least not in sufficient quantity to give a reaction. Variability in the time of appearance of the reaction is well known. I have seen it delayed to the seventy-first day of an irregular case.

Even a positive reaction with a partyphoid bacillus at higher dilution than with *Bacillus typhosus* does not prove that this bacillus is the cause of the infection. Grünbaum and Jolly [2] have recently (January) published a paper on the inconclusive nature of the results of the agglutination reaction in cases of typhoid fever. They tested the reactions of the blood of positive typhoid cases (proven by bacteriological examinations of the blood) against paratyphoid bacilli and obtained agglutination in 70 per cent. of the cases examined. In some cases the paratyphoid bacilli were agglutinated at higher dilution than typhoid bacilli. In 55 per cent. of the cases a colon bacillus reacted with the sera, and *Bacillus enteritidis* (Gärtner) in 22 per cent.

This only confirms what Durham demonstrated some years ago that the reactions of the typhoid-colon group are special, but not specific. The various members of the group give a group reaction, that is, any immune serum may react with several or more members of the group at low dilutions (frequently at 1:10 to 1:40, more rarely at 1:100).

It is, therefore, necessary to exercise caution in drawing conclusions even from positive reactions. If a serum reacts at 1:1,000 with a paratyphoid bacillus and at 1:100 or less with *Bacillus typhosus*, the case is probably, but not certainly, one of paratyphoid infection. However, a group reaction at 1:20 is sufficient for practical purposes. Prophylaxis and treatment are the same in any typhoidal case of infection by any member of the group. And it cannot be too strongly urged that the diagnosis of paratyphoid infections concerns the bacteriologist more than the practising physician.

A successful bacteriological examination of the blood, with proper identification of the bacillus recovered, becomes then the only final criterion of diagnosis in the differentiation of infections by various members of the typhoid-colon group of bacilli. (This statement, of course, does not refer to cases of infection by Gärtner's *Bacillus enteritidis*, except when they take the typhoid form.)

In further substantiation of my position I would call attention to the fact that the term "paratyphoid fever" has been discredited in Germany, Belgium and Russia.

Conclusions.—(1) That paratyphoid infections cannot be distinguished from typhoid fever except by the recovery from the blood of the bacillus concerned and its proper indentification. (2) That the present state of our knowledge makes it advisable to consider typhoid fever clinically as a disease which may be caused by several members of the typhoid-colon group of baccilli. (3) That the term "paratyphoid fever" is not only unnecessary but misleading.

REFERENCES.

1 Am. Med., 1902, Sept. and Oct.
2 Münch. med. Woch., 1905, Jan. 17.
For the complete bibliography of paratyphoid infections, see Vallet, Bull. med., Par. 1905, XIX, 33. Jürgens, Zeitschr. f. klin. Med., Vol. XXV, Nos. 1 and 2.

EXPERIMENTS WITH RADIUM EMANATIONS.[1]

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AT the suggestion of Mr. Hugo Lieber, a properly constructed tube, the interior of which was coated with radium, so constructed that the emanations could be made use of experimentally, was placed in my hands for the purpose of experimentation along the lines covered by my work in the field of ear, nose and throat diseases, with a desire that a report should be made at the March meeting of the Medical Society of the County of New York. A somewhat careful research of the literature upon the subject brings to light the fact that the emanation from radium was described Owens,[2] also by Dorn.[3] Madam Curie[4] mentions that "Radium is a substance which accompanies the barium obtained from pitchblende; it resembles the barium in its reaction, and is separated from it by differences

1 Read at the Medical Society of the County of New York, March 27, 1905.
2 Philosophical Magazine and Journal of Sciences, London, 360; October, 1899.
3 Abh. der Naturforsch. Ges. für Halle a. S., 1900.
4 Recherches sur les substances radio-actives, Paris, 1904.

of solubility of the chlorides in water, in dilute alcohol or in water acidified with hydrochloric acid."

Emanations.—"The gases present in an enclosure containing a solid salt of radium are radio-active. This radio-activity persists when the gas is drawn off with a tube and collected in a test tube."[5]

Rutherford says: "Emanations produced by radium, thorium and actinium, but not by uranium or polonium, are the power of continuously emitting into the surrounding space a material emanation, which has all the properties of a radio-active gas. Emanations are material and exist in a gaseous state, possess the property of chemical inertness and in this respect resemble the gases of the argon family."

Beck[6] mentions the emanations from radium without giving specific data. Several writers have made mention of the emanations without clearly defining any clinical methods for their employment, and on the other hand not giving any exact report of cases treated. Dr. Piffard has already given his views on the properties of radium *in extenso* and I have thought best to make use of the time allowed, in presenting a report of some experiments with the emanations.

It seemed to me that before commencing experiments upon patients it might be wise to determine whether the emanations possessed any bactericidal power. Accordingly a pure culture of streptococcus was exposed for a period of two minutes several times during the day, and it was found that the bacteria did not lose their activity. Inoculations from the exposed culture grew in new media with the usual speed, and the culture itself showed no effect from the action of the emanations.

A culture made from a pure culture was exposed immediately after inoculation for the same time, the exposure to the emanations taking place before the newly inoculated media was placed in the incubator, and the culture prospered in the usual way. A mixed culture taken from the ear discharge was in no way affected by exposure to the emanations. It was not thought wise to continue experiments along these lines, as the results did not seem to warrant any further effort.

In view of the statements by various observers and also by the discoverers of the emanations from radium, viz., that the activity of the air in the enclosed tube rapidly loses its radio-active force when fresh currents of air have access to the tube, it was always so applied to the part to be treated that the first current (naturally carrying the greatest amount of radio-active substance) fully bathed the part. An exposure of two minutes was the time usually employed. From the discoverer's standpoint it requires some time for the emanations to again form in the tube and saturate the contained air, so the treatment was generally repeated daily.

5 Quoted from original article of Madame Curie.
6 Laryngoscope, December, 1904, page 879.

Case I.—December 30, 1904, A. J., aged thirty-three years. In childhood had all the exanthemata, but without ear complications. At the age of nineteen contracted syphilis and was under treatment for three years and pronounced cured. Four years ago had an attack of laryngitis and could not use voice for five months. Three years ago began to have discharge from the right ear, which came without pain. Discharge had occasionally ceased for a few weeks, but was fairly continuous. Two months ago while cleansing the ear the patient noticed a growth in the canal and on one or two occasions slight rubbing had caused it to bleed.

Diagnosis.—Chronic suppurative otitis media with a large mass of granulation or polypoid tissue, which filled the entire external auditory canal. The hearing, of course, was practically *nil.* The growth was fairly well organized, although bleeding could easily be caused by rubbing. After cleaning the canal thoroughly the growth was exposed to the radium emanations for two minutes. Subsequent to this the growth seemed to be somewhat drier. The treatment was carried out daily, the effect each time being that at first the growth would appear red and after a few seconds it became pale in appearance. January 4, 1905, the growth seemed to be somewhat smaller in size. The treatment was continued daily for about thirty days and was finally discontinued because the growth did not decline in size or change materially in appearance, except for the moment.

Case II.—S. M., aged forty-eight years. For four years has complained of excessive discharge from both sides of the nose, with obstructed nasal respiration and pain in the head. During three months previous to the first application of the emanations her nasal cavities had been completely cleared of polypoid degeneration and the anterior ethmoidal cells had been thoroughly curetted. This brought about much relief to her pain, difficult breathing and quantity of discharge. At the present time there is some discharge evidently coming from the ethmoid cells and probably the sphenoidal cells. There has been complete loss of the sense of smell. The emanations were first applied December 30, 1904, after cleaning the nares. The tip was carried well up into the ethmoid region, the length of time being about two minutes. There seemed to be some drying of the tissues following this application. These applications were made daily, and on January 4 the patient said the pains in her head were better. From this time until January 14 the quantity of discharge varied, some days being considerable, on other days very little. The patient thinks that following the treatment there is some relief from the stuffy feeling in the head. From January 14 to February 13 the treatment with the radium emanations was continued in about the same manner as before the applications were made.

Case III.—J. M., aged thirty-six years. Had

running in the left ear since childhood with nearly complete loss of hearing. There is a large perforation in the drum and a small polypus. First application of radium was made January 4 and was continued daily until January 9, when he failed to appear and has not been seen since. On January 9, however, the last day of treatment, there was no discharge to be seen in the canal.

Case IV.—M. S., aged twenty-seven years. Ear has discharged for nine months; large perforations in both drums. Emanations were first used January 3, 1905. On January 8 the patient reported less discharge. The microscopical examination of the pus revealed bacilli identical with the Klebs-Löffler. On February 11 the emanations were discontinued, as there was now no appreciable change in the condition.

Case V.—G. B., chronic suppuration of the middle ear with polyp in the canal. Radium emanations first used January 6 and were continued daily until January 15, when the polyp was removed by the means of a snare. After this time the emanations were used until January 29, when they were discontinued, as there was no appreciable benefit.

Case VI.—M. M., aged seventeen years. Was first seen January 1, 1905. Diagnosis, atrophic rhinitis and ozena. The method followed in this case was first to remove all crusts from the nasal cavity, and after drying the surfaces the emanations were made use of in both nostrils for two minutes at each sitting. This treatment was carried out daily until February 10, 1905. There was some improvement in this case, probably resulting from the daily careful removal of all crusts. A careful examination of the case afterward showed a return to the original condition, so that the emanations could not be considered to exert any marked influence upon this type of inflammatory process.

Case VII.—M. C., aged twenty-four years. Also a case of atrophic rhinitis with a well-marked chronic catarrhal otitis media. In this case the emanations were not only used in the nasal cavities, but were included in the circuit when the middle ear was inflated by means of the catheter. This treatment was made use of for twenty-five days, when it was discontinued because no decided advantage from the use of the emanations could be ascertained, either to the otitis media or to the atrophic rhinitis.

Although this somewhat unfavorable report is based upon but few cases, the experiments were carried out with great care as to detail and without bias of any form. No opportunities were obtained for applications to infectious throat diseases, but the experiments made upon bacteria would seem to cover that field and definitely determine that the emanations would be useless in this class of cases.

It would have made this report more complete (1) if series of cases of malignant and benign tumors of the nose and pharynx; (2) syphilitic ulcerations; (3) tuberculous ulceration (especially faucial) and in thoracic diseases, could have been subjected to the emanations. This was, however, impossible in the time at my disposal.

I am indebted to my assistant, Dr. Kopetsky, for carrying out many of the details of these experiments.

SUPRAPUBIC PROSTATECTOMY.

BY A. I. MCKINNON, M.D.,
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HYPERTROPHY of the prostate, with its attendant train of symptoms, residual urine, cystitis, pyelonephritis, occasional periods of complete retention, etc., is now becoming generally recognized as a distinct surgical proposition.

Regulation of the habits of life and the recommendation of the careful use of the catheter has been until recently our main reliance for the alleviation of symptoms, and will probably still continue to be used in selected cases. The constant use of the catheter, however, is invariably followed by dangerous complications, and not infrequently periods of complete retention, with all the dangers and discomforts of distention, supervene. This symptom is certainly an absolute indication for radical procedure.

Too often mere suprapubic aspiration is selected as the best means of securing relief in this condition, and I wish to protest against such procedure, as tapping an infected bladder with walls thickened as the result of chronic cystitis is liable to cause a leak at point of puncture. The judicious plan of treatment is to perform suprapublic cystostomy, and this should be done at once and drainage of the bladder instituted. This operation is simple, and it may be done anywhere under local anesthesia, and complete enucleation of the gland can follow immediately, if patient's condition warrants the giving of a general anesthetic. Otherwise the bladder can be treated through suprapublic opening, and the complete enucleation deferred until such time as an anesthetic may be safely given.

This brings us to the question of when to operate in cases of enlarged prostate. The answer supplies itself when we consider the probable outcome of the condition if allowed to remain, and the simplicity of the operation itself. The mortality of catheterization is probably greater than that of the radical procedure, particularly if the latter be performed at an early stage of the enlargement—hence I recommend operation in all cases where the prostate is large enough to cause symptoms.

Various methods of operation have been devised which narrow down to those (1) which are partial with knife or cautery, palliative in their intent, and not to be recommended because they have all the disadvantages and none of the advantages of the complete operation; and (2) complete enucleation of the gland, which is the

operation to be recommended in every case of hypertrophy with symptoms.

In taking this latter course two routes are open for performing it, viz., the perineal and suprapubic.

The successful complete enucleation of the prostate is one of the most satisfactory of surgical procedures, and the relief to the patient who has been obliged to urinate or use a catheter every hour or two day and night is marked. The choice of method, whether by the upper or lower route, is one which time alone will decide. Both will probably continue to be used as indicated by the particular case.

For the occasional operator there is no doubt that the suprapubic operation is the more simple one, and the liability of embarrassing complications much less. Convalescence is more comfortable and the danger to life is practically nil. One of the complications most distressing to the comfort of the patient and most disastrous to the reputation of the surgeon, injury to the rectum, is practically eliminated by the choice of the upper route, the only distressing sequel to this method being a possible resulting fistula; but this, if persistent, can be easily remedied by a simple plastic operation.

The operation of enucleation of the prostate by suprapubic cystotomy is as follows: The bladder is distended by air or water, a vertical incision is made through skin and fascia, the recti retracted and bladder exposed; an incision is made through the bladder and the edges grasped with forceps. Silkworm-gut sutures are introduced through entire thickness of abdominal wall securing the bladder, tied and left long. With the left fore-finger as a guide, a snip is made with scissors through the mucous membrane of the trigone directly behind the internal meatus. The finger is gently insinuated into this opening and the separation of the gland from its capsule is commenced. One or two fingers of the gloved right hand are now passed into the rectum and the prostate pushed up, and with the left index finger the enucleation is continued. This is generally very easily accomplished, guided by the fingers in the rectum; occasionally a band of fascia will require separation with a blunt-pointed scissors or dissector. When the prostate has been well loosened from the mucous membrane it may be grasped by a volsellum forceps and pulled up, making it easier to strip.

If it is desired to see the field of operation the patient may be put in the Trendelenburg position, the bladder walls retracted and the field thus exposed.

The prostate having been removed, the bladder is flushed out with a hot salt solution and is distended with a large amount of iodoform gauze, after the manner of a Mikulicz drain. This packing prevents hemorrhage, ensures antisepsis and drains away the urine as soon as it accumulates. I consider this packing of the bladder one of the most important points in the after-treatment, as it prevents septic absorption and renders the bladder walls healthy. It also prevents the ammoniacal odor of the urine, so distressing after bladder operations. The gauze may be left in four or five days. An occasional hypodermic or suppository of morphine may be needed for the first few days. After the removal of the gauze the edges of the wound are approximated with adhesive strips, and it will generally close in two or three weeks, and the patient will be urinating naturally through the urethra. An occasional washing of the bladder may be indicated, but where gauze pack has been used frequent irrigations are not necessary.

The patient is able to be up and around the room in two or three days. A liberal dressing of absorbent gauze and cotton frequently changed will keep him tolerably dry and comfortable during convalescence.

The points I wish to emphasize are:

1. Suprapubic cystostomy under local anesthesia instead of aspiration as an emergency measure in cases of complete retention from enlarged prostate.

2. The simplicity and freedom from complications and sequelæ of the operation when performed by the suprapublic method.

3. The virtue of packing the bladder with iodoform gauze after the method pointed out.

PREVENTION AND TREATMENT OF PUERPERAL SEPSIS.

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I DO not feel that I should offer any apology to this assembly of men who are so vitally interested in the subject under discussion. Though it has been written about for ages and discussed by our most able men, we are constantly reminded of the need of more knowledge and more systematic work along this line by seeing or hearing of some woman losing her life at time of confinement. The picture is typical; the woman is confined; on or about the third day we find that she has had a slight chill, that the temperature has risen as a result; then it is that we begin to make excuses to the family for her condition, that she is bilious, that her kidneys are out of order, etc. I know that there is not a man before me to-day who, fully realizing his responsibility, does not watch his obstetrical cases with great care for the first few days after confinement; most of us with the constant fear that this one may be the case of infection that will cause us to feel much chagrined. I have no class of work that causes me more anxiety.

It was my misfortune to be called to a very severe case of infection in the first few months of my professional career. At that time I did

not feel that I was sufficiently posted to treat the case, and so told the husband. At my suggestion two consultants were called; they were both men of ability and reputation. At the time that they saw the woman the posterior cul-de-sac was as tight as could well be without rupture. I know now that that pelvis was full of pus. I had never done nor had I seen done a vaginal puncture for the relief of this condition. In a few hours after seeing the woman she developed general peritonitis and died a few days later. This case was treated with salts, calomel and opium. While the results might have been the same had other methods been pursued, I shall always feel that that woman's life was lost by not receiving the proper treatment at the first.

The statistics of puerperal infection cannot be relied upon. Most of us know of cases of puerperal infection and death reported as being due to typhoid fever, malaria, occlusion of the bile passages, to previous bad health and other like excuses. In this day of advances in all sciences the death-rate from puerperal sepsis is practically the same in private practice as it was years ago. Statistics of private work are unreliable in the South for several reasons: First, there are those in the profession who will not report a death as due to puerperal sepsis for fear of losing professional prestige in that locality, thereby losing fees. Then there are others who fail to report the true cause of death from ignorance of the real condition. Also a great amount of work is done by midwives, especially among the very poor whites and negroes. Just here I should like to say that there should be some law governing the practice of these midwives; they should be forced to stand an examination along the line of their work. Too many women are sent to the Great Judgment Bar by their uncleanly, not to say filthy work. The reports from the hospitals, although reliable and valuable, do not give us any idea of what is occurring on the outside. In hospitals and maternities the surroundings are the best, with the best physicians of the locality to conduct the case, with trained assistants, with nursing by competent hands, with time to prepare the patient, her bedding and clothing, with all instruments and dressings sterilized after the most improved methods; whereas, on the other hand, in private work we have to contend with all kinds of cases, in all stations of life, with all kinds of nurses, often a meddlesome negro nurse who is a midwife as well as a nurse.

While on a recent visit to New York I saw Dr. W. M. Polk operate upon two cases of infection in one day that were sent into Bellevue Hospital from the crowded districts of New York. The same afternoon I saw Dr. Stewart operate for the same condition.

At a recent meeting of the Philadelphia Obstetrical Society Dr. Hirst said that he had to operate upon a large number of these patients every year. In the last three days three of the most desperate cases of puerperal sepsis were brought into the University Hospital. He has usually from four to six cases under observation.

Go back a few years in obstetrical practice, and you will see a great many patients who had "childbed fever," phlegmasia alba dolens and their complications, and they were considered unavoidable. Despite the great improvements in antiseptics, fever in the puerperal state is still seen. Strict asepsis in obstetrical work is practically impossible, owing, first, to the conditions that might have existed before we examine the woman, as the presence of gonococci, staphylococci, etc., and then to the anatomical relations, the close proximity of the anus, the excretions and the difficulty of making the vulva aseptic on account of the folds of the vulva and hairs.

It is admitted by all scientific workers that puerperal sepsis is due to the different streptococci, gonococci, staphylococci and to *Bacillus coli communis*. Then, when we admit the cause, we should use every effort to prevent the result. We should exercise the greatest care in our work in preparing the patient for confinement. We should see that she has had a general bath, with especial attention to the parts surrounding the vulva, that she should have on a clean gown, that the bladder and bowels are emptied. The bed should be prepared so that all discharges can be removed when the woman is cleaned up after the birth of child. A rubber sheet about four by six feet should first be placed on the bed, this to be covered over with a clean sheet; the use of the Kelly pad is advisable for two reasons, the ease with which it can be made aseptic, and its cleanliness, since it catches all discharges. If the rubber pad is not used, an absorbent pad should be placed next to the rubber sheet and covered over with the draw sheet; the top sheet should likewise be clean. Where I can direct the preparation of the bed, I like to have the sheets come to the room fresh from the laundry.

The Kelly pad should be thoroughly soaked in bichloride solution before being placed under the woman. Then, with the woman placed in the dorsal position, I have the nurse—or, in the absence of a competent one, do it myself—clip the long hairs from the mons veneris and labia majora, then sponge the external parts thoroughly with bichloride solution 1 to 2,000.

With the coat removed and a rubber apron on for a twofold purpose, to protect the clothing and to protect the woman from any germs that may have accumulated on your clothes in everyday work, with the sleeves well above the elbows, scrub thoroughly with soap, brush and warm water from five to ten minutes, where time will allow, then soak the hands thoroughly in bichloride solution, 1 to 2,000, for at least three to five minutes; careful attention should be given to the nails. I prefer the use of gloves, soaking

them thoroughly in bichloride solution of same strength. It is admitted that all cases of puerperal sepsis are caused from without, so we cannot use too much care in our first preparation. When you have gotten to the case late and have not time to make thorough preparations, the hands should at least be soaked in antiseptic solution, preferably bichloride solution, and gloves worn, taking due care not to make any more examination than is positively necessary, and by no means in the vagina until you have time to cleanse the hands thoroughly. The parts should be cleansed hurriedly with bichloride solution before making any examination. After preparations have been made, make a careful examination; do not allow the examining hand to come in contact with the unclean parts of the woman. If possible make a diagnosis at your first examination, then watch the descent of the head by making external examinations; in normal cases one or two vaginal examinations are all that is necessary. One mistake that we make is in examining the woman too often. It not only increases the danger of infection, but increases the woman's anxiety as to her condition. Of course, there are cases where this rule will not apply. When it is necessary for version to be done or forceps used, the hairs should all be shaved off from mons veneris and surrounding parts, then scrubbed thoroughly with soap, water and bichloride solution. A bichloride douche or lysol 1 per cent. should be given before delivery; this cleanses the vagina, and where lysol solution is used it acts as a lubricant. In normal cases of labor the douche is not advisable by any means, especially after delivery. After the child is delivered the placenta should be delivered by Credé's method; it should then be carefully examined to see that it is intact and that all membranes have been removed; then the external parts should be sponged off with bichloride solution 1 to 4,000 and a sterile napkin applied over vulva. This should be changed and the parts sponged off with bichloride or lysol solution every few hours. Where the forceps have been used an intra-uterine douche should be given, a bichloride 1 to 10,000 or lysol 1 per cent. solution being used. The danger from absorption is practically nil from this strength. The solution should never be stronger than this in the uterus.

In all cases, after the third stage of labor is completed, the perineum should be carefully examined for tears; where there is a tear of any consequence, more than the simple breaking of the continuity of the mucous membrane, it should be repaired at once, within the first six to eight hours at the longest. The woman should be turned crosswise in the bed; a sheet folded can be used very satisfactorily for leg-holders; then cleanse the wound thoroughly with antiseptic solution and approximate the torn parts carefully, being sure that you approximate muscle to muscle, etc. The instrument shops now carry a very satisfactory ligature, threaded in needles, sterilized and sealed in glass tubes; chromicized and plain catgut is the best suture material. The closed tear is much less liable to become infected than when it is left open. I saw a case of infection recently where the doctor had closed the torn perineum with plain ball cotton thread taken from a workbasket in the room; the case was seen by a third physician, who told the family that the trouble was caused by the perineum having been closed at all, that it should have been left open. I find men occasionally who contend that the woman is much more liable to become infected if the tear is closed. For my part, I much prefer taking chances with it carefully repaired, as it does not leave so much raw surface for absorption. In all cases where I have a tear I close it at once, in most cases anesthetizing the patient. In cases where forceps and instruments are used it is necessary that they be carefully sterilized; they should be boiled and used from the same vessel that they are boiled in, or placed in a sterile one in a 1 per cent. lysol solution. The ligatures can be reboiled along with the instruments where the ones referred to are used.

The woman should be watched carefully for the first five to seven days, the nurse should keep the parts thoroughly cleansed with a bichloride solution 1 to 4,000. Should the lochia become offensive or the temperature rise above 99° to 99.5° F. a vaginal douche should be given at once; unless the temperature reaches normal in a few hours a careful digital examination should be made, and especial care given to the possible retention of membrane and pieces of placenta. You should see that the bowels are well opened, and that the kidneys are acting normally. Where the vaginal douche does not reduce the temperature in a few hours, the dull irrigating curette should be used with great care, using very little force, for fear of puncturing the uterus. Bichloride solution 1 to 10,000 or lysol one per cent. solution should be used, using as much as two gallons at the time, and as warm as can be borne by the patient. Do not pack the uterus with gauze after curetting, as this retains discharges. I have done this and upon removal twenty-four hours later found that the odor from the gauze was worse than the original condition. Elevate the woman's head or place her in a sitting position for a few moments to allow the uterus and vagina to empty themselves of the solutions used. This should be followed by hot douches every three to four hours, using two gallons at a time; this aids involution of the uterus, besides being soothing to the patient. Where the intra-uterine douche has been given with bichloride solution follow this with normal salt solution, as this will dissolve the albuminate of mercury formed in the uterus. After this give due care to the breasts, as they sometimes cause fever from slight inflammation or occlusion of the milk

ducts. Should the temperature persist, the discharge remain offensive, the pelvic organs and lower abdomen become tender, this patient should we watched with care. The tubes and ovaries should be given especial attention, and the posterior cul-de-sac watched. One point on which I wish to lay stress especially is the making of careful digital examinations.

I was called ten days ago to see a young woman who had been confined three months previously; she had been in bed ever since confinement with enlargement and inactivity of the liver, acute Bright's disease, inactivity of the kidneys, typhoid fever and pneumonia. When I was called it was time to sign the death certificate, which I did two days later. Upon entering the room the odor was unbearable. I made an unsatisfactory digital examination; everything in the pelvis seemed solid. I removed something from the vaginia, which appeared to be decayed placental tissue. She had general peritonitis and was green from absorption of toxins; temperature 104.5° F., pulse 140, respiration 40. I told her husband that I was powerless to help her; she died about thirty-six hours afterward.

Where there is infection of the uterus it spreads to the surrounding parts through the lymphatics and through the tubes into the peritoneal cavity. Often with these mild cases of infection, with infiltration into the tubes, ovaries and pelvic tissue, this condition can be greatly benefited by using systematic hot douches every three hours, preferably lysol solution 1 per cent., about two gallons at the time. This will very often arrest the infection and aid resolution. Should you not be able to cause resolution the inflammation may become localized and form an abscess in the pelvis or some pelvic organ. Should these abscesses appear they should be opened through the vagina, a T-shaped drainage tube left in. I use the drainage tube in preference to the gauze because my results have been best with the tube; as previously stated, I have used the gauze, and upon removal after twenty-four hours find that the odor is worse from the gauze than from the pus that was first removed. Gauze not only does not drain well, but stops the flow of pus and débris. I have found in these cases that the temperature would rise until the gauze was removed and then drop in a few hours. Vaginal douches should be given every three to five hours to keep the pus washed away and stop absorption. Drainage tube should be left in for twenty-four hours, and if patient is doing well, forty-eight hours, then removed, boiled and replaced if necessary. Where the infection has been general, the patient begins to turn green, with quick thready pulse, temperature showing septic variations, the whole body bathed in profuse perspiration, with sweetish breath; these cases are desperate. The same local treatment should be kept up, rectal enemas of normal salt solution should be given one pint at the time, usually the woman can retain a pint every three hours. Normal salt solution should be given subcutaneously; under the breasts and under the skin of the thighs are the most acceptable sites. In the event you cannot wait for this, give it directly into the veins, from a quart to three pints at a time. Stimulants should be given as is indicated, in the form of whisky, strychnine and such heart stimulants. The bowels should be kept open and the kidneys acting normally. Rubbing the whole body with alcohol is beneficial and acceptable to the patient. Strictly liquid diet should be given. In the use of the normal salt solution, the nine-tenths of one per cent. solution should be given, as this is isotonic with human blood; the six-tenths of one per cent. is isotonic with frog's blood and may cause some solution of the hemoglobin. I have seen cases of septicemia where, after the use of the normal salt solution, the temperature would drop several degrees in a few hours, and the pulse come down from 140 to 100. Dr. Robert T. Morris speaks of the use of normal salt solution as "blood washing." It dilutes the toxins in the blood, and aids elimination through the kidneys and skin.

In May, 1904, I was called in consultation with Dr. G. D. Couch, of Hapeville, to see a Mrs. H., who had been confined four days previously; on the second day after confinement she developed a temperature ranging from 105° to 107° F.; this kept up for forty-eight hours when I saw her. There was tenderness in the lower part of the abdomen, an offensive discharge from the vagina. I made a careful digital examination, found the uterus large and boggy, and could feel what I took to be some small pieces of membrane. There was tenderness on each side of the uterus, and great tenderness over the body of the uterus on pressure. I advised immediate curettement, which was done at once with the patient thoroughly anesthetized. I used a dull irrigating curette. There was a small amount of débris removed. She had unavoidably been confined in a room where her husband had had smallpox a few weeks previously. After curetting her the temperature dropped to normal in a few hours, to rise again on the following morning. The second day after seeing her I opened an abscess through the right side of the vagina; two days later one through the left, and two days later one through the posterior cul-de-sac. Three days later I opened another at the extreme right of the vagina, she being anesthetized each time. Her temperature kept up all this time, and just here she began to complain of pain above the brim of the pelvis on the left side. By bimanual examination a small enlargement could be felt high up in the pelvis. In about three days this could be detected through the abdominal wall, which gradually enlarged. Then I advised that she be brought to Atlanta, which was done, and she was placed in the Tabernacle Infirmary. The following morning the abdomen was opened directly over this en-

largement, which was just above the brim of the pelvis. Upon cutting through the abdomen wall it was found that the mass was separated from the peritoneal cavity by adhesions. The left tube could be traced up to this mass, much thickened and enlarged. Upon opening the abscess it was found full of very offensive pus. The cavity was thoroughly flushed with salt solution, three rubber drainage tubes were left in, and dressings applied, patient placed in bed on her left side to keep up drainage. The external dressings had to be changed every few hours for the first few days. At this time I found another abscess between the bladder and the vaginal wall, which was opened and drained. This case was treated with the normal salt solution, as suggested. She was confined to her bed in the hospital two months and ten days, when she was discharged in good condition. I am informed that she is again pregnant.

Finally, the points that I wish especially to emphasize in this paper are: (1) The careful preparation of the bed and the woman before the birth of the child, with especial attention to the hands of the physician. Then the examination of the placenta and membranes. (2) After birth of child examination of perineum for tears, and if they are present repair them at once. (3) In case there is a rise of temperature you should start at once with treatment. (4) The importance of making careful digital examinations, the use of the dull irrigating curette early, where the temperature is not reduced by douches. (5) The importance of the normal salt solution to dilute the toxins and to aid absorption; the strength of bichloride solutions used. (6) The preference of tube over gauze drainage in these cases; the absolute avoidance of gauze in the uterus after curetting. (7) The importance of opening and draining the abscesses as they form in the pelvis or any pelvic organ.

A PLEA FOR SURGICAL INTERVENTION IN SUSPECTED MALIGNANT DISEASE OF THE ABDOMINAL CAVITY.

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THE study of malignant disease is greatly simplified by the practical recognition of a few basic principles: (*a*) Primarily it is strictly a local ailment; (*b*) at a more or less early stage it infiltrates widely the surrounding tissues, affects regional glands or is conveyed to distant organs by metastasis, and thus ceases to be local; (*c*) the period of time a neoplasm has existed or its size is no evidence of the extent of its dissemination.

From these premises certain practical deductions may readily be made: (1) If at an early stage, while still strictly localized, the pathological tissue is entirely excised, the growth will not return; (2) if considerable infiltration has already taken place, or if the nearby glands are already affected, complete removal is only possible by very wide dissection, and even then success depends largely on chance; (3) after the disease is extensive, and especially after involvement of parts not susceptible of complete removal, or after the occurrence of metastases, the case is hopeless, and all that can reasonably be expected is to palliate and mitigate to a slight degree the intensity of the suffering. Outside of surgery nothing has been found of any value in the treatment of internal carcinoma or sarcoma. Occasional reports of X-ray cures of superficial epitheliomata do not in any way affect the discussion of abdominal malignant disease.

The foregoing forms the foundation of a few observations desired to be made concerning malignant disease affecting the intra-abdominal viscera. Successful removal is here possible in almost any situation if the operation is undertaken while the growth is still local. But it must be confessed that heretofore most of the cases of intra-abdominal malignancy have ended disastrously. The greater number of patients have died without any attempt at removal. A minority have been treated surgically. In many of these the exploratory incision has revealed quite impossible conditions and the surgeon has been constrained to close his incision without any effort at removal of the disease; or such a condition has been found that excision of the disease has been out of the question, but a palliative operation has been done, as a gastro-enterostomy for inoperable pyloric cancer; or the viscus invaded has been resected or removed and the patient has died of the operation, owing to the extent of the operation necessitated by its lateness, or to the weakened condition brought on by the long illness, or to a combination of the two; or finally, the operation is successfully accomplished, the patient makes a rapid convalescence, only to die in a few months or a year or two from recurrence of the neoplasm.

Only very rarely has the surgical procedure been carried out while the disease was still local and curable by local extirpation. This is not a fanciful picture, but represents the average of work being done by operators to-day.

The reason for the necessity of this discouraging admission is fourfold: (1) The patient is late in consulting a physican; (2) when consulted there is too often a tendency to regard all cases with intra-abdominal symptoms as due to errors of digestion and to prescribe pepsin, etc., without a serious effort to make an accurate diagnosis; (3) even when malignant disease is suspected, the results of surgical intervention in the past have been so disheartening that many physicians are yet loath to advise operation; (4) when operation is advised, such is the general hopelessness among the laity of relief by surgical means that they first try the X-ray or other

fad, and thus more valuable time is lost. Everything which tends to delay early radical treatment simply serves to perpetuate the gloomy feeling with regard to the treatment of this disheartening disease.

I may be too much of an optimist, but it is my opinion that if the attitude of the profession could be reversed a ray of hope might yet be made to fall on even such a dire malady as cancer. It will not come about by spasmodic effort here and there, but only by a general readjustment of views on the part of the profession at large. It will necessitate more alertness, a more general resort to careful painstaking diagnostic methods, a greater courage in advising the thing that reason dictates, and the substitution of a little optimism for the pessimism which now prevails.

A continuation of the too general practice of prescribing a little pepsin and hydrochloric acid, or other placebo, for every patient complaining of indigestion, without any physical examination or the use of laboratory aids, will never bring about any improvement in results. Every patient who consults a physician is entitled to the benefit of all the resources of modern science in order to clear up the diagnosis and give the correct advice or treatment. In view of the manifold lesions apt to occur within the abdominal cavity, it seems especially mandatory on the profession to make careful examinations whenever a patient complains of symptoms in this region. Such conscientious study of one's cases is only fulfilling the obligation of an implied contract.

Suppose that for a period all members of the medical profession should resort to the painstaking examination here recommended. It would bring about a revolution. Many things would be discovered among the old chronics not suspected. Patients hitherto treated in a routine fashion and deemed decidedly uninteresting, denominated bores or hysterics, would be found to possess pathological lesions of the greatest interest. Many of them would be found susceptible of complete cure, and we should be led to a much greater appreciation of the possibilities of modern medicine than ever before. Incidentally it would be the hardest blow that could be delivered at the osteopathists, Christian Scientists and other faddists, because myriads of patients heretofore unrelieved and forced to go elsewhere would be cured.

But, in spite of all the modern methods, clinical and laboratory, there are still great difficulties in making accurate diagnosis of early malignant disease when it affects the stomach, intestines or other abdominal viscus. Unfortunately most of our positive symptoms are late in the disease—too late to permit of the ideal treatment. In cancer of the pylorus, or pyloric end of the stomach, obstructive symptoms, coffee-ground vomit, palpable tumor, etc., do not make their appearance until so late in the disease that dissemination, or, at least, extensive infiltration, has already taken place and complete removal is rarely possible. The absence of HCl, and the presence of lactic acid is also a late symptom, and not always conclusive. The presence of the Eppler-Boas bacillus is of somewhat greater value, but even this is often misleading.

Therefore, if we would aid in bringing about an improvement in results we must not wait for such positive symptoms that all the patient's friends have already made the diagnosis, but operative intervention must be made before the diagnosis is absolutely certain. Several years ago I suggested that when, after careful examination of a person of middle or advanced age suffering from a comparatively recent or progressive gastric disease, and the use of the best modern dietetic and medicinal treatment for two or three weeks without bringing about improvement, a lively suspicion of cancer of the stomach is allowable.

In cases of this character an exploratory incision is likely to reveal cancer. Even when the incision is made on suspicion the disease has been found to be in a surprisingly advanced state, and the natural wonder has been why the clinical picture was not more positive. Sometimes, happily, the exploration will not reveal malignant disease, but a gastric ulcer, or adhesions which may be relieved by gastro-enterostomy, or by freeing the adhesions. Even if nothing is found that can be relieved by operation the case is cleared up and no harm will have been done by the incision. This last will be very rarely the case, as usually the conditions bringing about enough suspicion of malignancy to warrant the procedure recommended, if not caused by cancer will be found due to some gross surgical lesion.

In cancer involving the gall-bladder, the intestines, the body of the uterus, the same thing is true. By the time the disease has advanced to such a stage that a definite diagnosis is possible, it has probably progressed too far for successful surgical removal. The unexplained presence of blood and mucus in the stools, localized accumulation of gas, which appears to be due to inability to pass along the intestines freely, a rather abrupt onset of troublesome constipation, not relievable by ordinary means, all call forth a decided suspicion of malignant disease, and should not be lightly dismissed. To wait until a palpable tumor makes its appearance is usually to wait until the peritoneum or other tissue is involved and the dissemination is so great that permanent cure is out of the question.

One of the most satisfactory cases of cancer of the intestines I have ever had was in a man who came to me with a very large left inguinal hernia—the largest I have ever operated—the mass hanging down to the knees. The immediate cause of his seeking operation was recent pain he had experienced and constipation. On opening the sac the sigmoid flexure was found with a hard malignant ring involving three-fourths of the circumference. There was also a gland in

the mesosigmoid three-quarters of an inch in diameter and of that characteristic woody hardness with which we are all familiar. Nearly seven inches of the large bowel were resected, the ends united by suture, and the man is now in excellent health, two years after the operation. The pathologist reported this a columnar-celled carcinoma.

When the diagnosis is positive sometimes an operation is indicated, at least a palliative one, but here too often the disease is found to have progressed too far for successful removal.

There is still another type of case, unfortunately at the present time the commonest of all, where the disease has manifestly progressed too far to offer any hope of relief. There is extensive dissemination over the abdominal cavity, affected glands are to be found in the inguinal or cervical regions, or already metastases have made themselves apparent. In such cases it is better for the credit of surgery to resort to no operative procedure.

In intra-abdominal malignant disease, therefore, there are three classes to deal with: (1) Cases too far advanced for any operative procedures; (2) cases with a fairly clear diagnosis of malignancy and offering apparently a fair chance of relief by operation; (3) cases with only a well-defined suspicion of malignancy where an exploratory incision is confidently advised. This is the type of case offering much promise of successful operations and where a great stride in advance may be predicted if the profession can see its way clear to adopt the suggestion of advising an operation as soon as a strong suspicion of malignancy is found.

Let us not lose sight of the fact that when a patient dies of cancer of the abdominal cavity, there was once a time when it was localized, and could have been successfully removed and a permanent cure effected!

PRESIDENTIAL ADDRESS: THE INSANE IN CANADA.[1]

BY T. J. W. BURGESS, M.D.,
OF MONTREAL, CANADA.

GENTLEMEN: My first duty is to reiterate my thanks to you for having called me to this chair, a distinction I can attribute only to the fact that in honoring me you sought to honor, not me alone, but the Canadian members of the association. "No man is born without ambitious worldly desires," says Carlyle, and surely there could not be a more laudable ambition than to became the president of this, the oldest of American medical associations, a position of which Dr. John S. Butler said, on his elevation thereto, in 1870. "In my opinion, to be elected President of this association is the highest honor of the profession." Rarely, however, does gratified ambition bring peace of mind, and I, alas, have been no exception to the general rule. The thought of occupying a position that had been held by such intellectual giants as Woodward, Bell, Ray, Kirkbride, Butler and Earle, all members of the "glorious original thirteen," besides many other illustrious men, abashed me—made me fully conscious of my inability to fill it properly. Nor did the sense of my demerit lessen as the days rolled by. On the contrary, the long list of presidents, whose names are familiar to us because of their attainments in psychological medicine, loomed continually before my eyes, added to which the task of to-day's address haunted me like an ever-lengthening shadow. I had but one thought to reconcile me to the greatness your generosity had thrust upon me. It was that the kindness which prompted you to elect me as your president would be extended so far as to induce you to overlook my shortcomings, and that if, in the matter of the address, I could not, like my predecessors in office, clothe my thoughts in

> "Choice word and measured phrase, above the reach
> Of ordinary men,"

you would at least take the kindly will for the imperfect deed.

In my search for a topic upon which to discourse, I fully verified the words of Terence, "*Nullum est jam dictum quod non dictum sit prius.*" Everywhere I found the fields of medico-psychology so well harvested by my forebears that there was apparently nothing left for even a gleaner. Nevertheless, a subject had to be selected, and I finally concluded that, as the oldest medical officer connected with the insane asylums of Canada, in point of length of service, I could not do better than tell you something about the development of our Canadian asylum system, the status of the insane in our Dominion, and what, in my estimation, are some of our most crying needs for the betterment of those so justly styled "the most unfortunate of all God's afflicted ones."

Of the number or condition of the insane in Canada under the French regime, that is, prior to its accession to England in 1763, I have been able to learn little or nothing. Doubtless, their treatment differed in nowise from the cruelty shown them in all other countries at the same period. That they were not totally neglected is manifested, however, by the fact that, in 1639, the Duchess d'Aiguillon, niece of Cardinal Richelieu, founded the Hotel Dieu of Quebec for the care of indigent patients, the crippled, and idiots. As here employed, the term idiot probably refers to all forms of mental disorder, acquired as well as congenital, and the creation of this establishment is especially noteworthy inasmuch as it was not only the first move toward the proper care of the insane, but was the first hospital instituted in North America. Four years later, namely, in 1643, Mademoiselle Mance founded the Hotel Dieu of Montreal to meet the same requirements.

For well-nigh three-quarters of a century after the establishment of British rule, the con-

[1] Delivered before the American Medico-Psychological Association, at San Antonio, Texas, April 18, 1905.

dition of the insane in the various Crown Colonies, which now make up the Dominion of Canada, was deplorable in the extreme. Each county seems to have cared for its insane as best it could by confining them in almshouses and jails. The poor lunatic did not appeal to the sympathies of the public—a workhouse was good enough for him if harmless, a prison his proper place if dangerous. The thought that he might be cured, and that no effort should be spared to cure him, occurred to few, if any. Bereft of man's noblest attribute, the mind, lunatics were regarded as little better than brutes, and were too often treated accordingly. While falling short of the Napoleonic Code, published in 1804, which openly classed the insane with beasts, and ordered the punishment of those who allowed "the insane and mad animals to run about free," the law in Canada deemed them at least on a par with criminals. In proof of this witness an act, in force as late as 1835, which authorized any two Justices of the Peace, without any medical certificate, "to issue a warrant for the apprehension of a lunatic or mad person, and cause him to be kept safely locked in some secure place directed and appointed by them, and, if they deem it necessary, to be *chained*."

The first of the old British North American colonies to make special provision for its insane was New Brunswick, by the conversion, in 1835, of a small wooden building in the city of St. John, originally erected as a cholera hospital, into an asylum for lunatics. This institution, the first of the kind in Canada, continued in operation for a little over thirteen years, under the medical supervision of Dr. George P. Peters, a native of St. John, but a graduate of Edinburgh University.

Dr. Peters had no previous experience in the care of the insane, but, being energetic and deeply interested in the welfare of his charges, did exceptionally good work considering how he was handicapped. That he was in advance of his day, and fully recognized the importance of special training for the proper treatment of mental diseases, a fact so often lost sight of by governments and their appointees, is evidenced by his urging, through vainly, the legislature to get a physician from England, one trained in the best schools of psychiatry, to take charge of the new asylum. The difficulties he had to encounter were many, not the least being one that is equally common to most of us at the present day, that of finding suitable nurses. On this point he quaintly reports: "I find it very difficult to secure proper attendants, especially for the female patients. Those who apply for the place are coarse and ignorant, their only qualification for the position being good muscular development, and absence of all proper sensibility."

The following record, preserved in the Sessions of the Peace minute-book, gives a good idea of the results attained by Dr. Peters during the first thirteen and a half months of his incumbency. "Of the thirty-one admissions," it says, "there have been discharged—cured, six; improved, five; to friends, not improved, two; died, four. Of the remaining fourteen, one is much improved, two perceptibly improved and eleven without any visible improvement." Some of the details of the itemized accounts, contained in the same volume, are highly suggestive of the times and of the methods of treatment, in which blood-letting and restraint must have played a considerable part, and bathing and light been luxuries:

"W. McBay, for twelve hogsheads of water (for one month), one pound fifteen shillings.

"W. Hammond, for thirty pounds rush lights, ten pence per pound, one pound five shillings.

"Harvie and Allen, for eight tin bleeding cups and one tin pan, seven and sixpence.

"D. Collins (saddler), for three hand mufflers, one pound fifteen shillings.

"G. T. Ray, for twelve straight waistcoats, at twenty shillings each, twelve pounds."

In 1848, this temporary refuge, the pioneer Canadian asylum, was abandoned, the inmates, ninety in number, being transferred to the present institution, the erection of which had been begun two years previously.

Ontario, or, as it was then called, Upper Canada, was the next of the provinces to make a movement toward providing for its insane, the old and recently abandoned jail at York, now Toronto, having been fitted up and opened as a temporary asylum in 1841. Prior to this, numerous attempts had been made in the House of Assembly toward the creation of an asylum, the government going so far, in 1836, as to appoint a Commission to visit the United States for the purpose of obtaining information on the subject. The chairman of this Commission was Dr. Charles Duncombe, who afterward, during the rebellion of 1837, became the leader of the rebels in the western part of the province, and only saved his neck from the hangman's noose, on the defeat of the movement, by making his escape across the Detroit River into Michigan disguised as a woman; this, despite the fact that a reward of £500 had been offered for his apprehension. Dr. Duncombe's report is particularly interesting to us, because he therein gives an account of his visit to Worcester Asylum, Massachusetts, then under the superintendence of Dr. Samuel B. Woodward, who eight years later became the first president of this association, of which he had been also one of the originators. His institution was the one, of all those inspected, that best met the approval of the Commission, and the one, the general plan of which they advised should be followed. In concluding his report Dr. Duncombe thus interestingly outlines his views on the subject of lunacy and the object of the proposed structure: "The building is not designed for the cure of the ordinary diseases of the body, but 'to restore the disjointed or debilitated faculties of a fellow creature to their natural order and offices, and to revive in him the knowledge

of himself, his family and his God.' The subject of lunacy has been until of late years less perfectly understood than any other complaint known to our country that is at this moment successfully treated, but thank Heaven that the disease of an organ of the mind is no longer considered a crime subjecting the unfortunate subject of it to imprisonment, punishment and chains, and that with the exception of this Colony no other portion of America has their insane confined in their jails, and I am well satisfied this will not be the situation of these unfortunate persons longer than until their number and present cost of support is known, and the legislature have time to provide a suitable asylum for their relief."

The makeshift asylum, into which the old jail had been converted, was placed in charge of Dr. William Rees, who had long urged upon the government the necessity for such an establishment, and continued in use up to 1850. At that date the patients were transferred to the present Toronto asylum, which, for twenty-two years after, was the field of labor of the venerable Dr. Joseph Workman, to whose wisdom much that is best in the present system of caring for the insane in Canada can be traced.

Kingston Asylum, generally known as Rockwood Hospital, was the second asylum born in the province of Ontario. It had its birthplace in the stable of the old Cartwright mansion, which, in 1856, was fitted up for the reception of twenty-four female patients. Like its successor, the present structure, opened in 1862, it was originally designed for a criminal lunatic asylum, and as such the institution remained in charge of the Federal Government, an adjunct to the Penitentiary, until 1877. In that year it was purchased by the local legislature and became one of the ordinary provincial establishments.

London Asylum, the third Ontario asylum in point of age, was, when opened in 1859, originally located in the old military barracks at Fort Malden, on the Detroit River, and formed a branch of the Toronto institution, which had become congested. In 1870, the present hospital, at London, having been completed, the patients were transferred there.

Of the other five public asylums in Ontario, that at Hamilton was originally built for an inebriate asylum, but was never used as such, being utilized instead for the reception of the insane, and opened in 1879. Mimico Asylum was first occupied in 1890, Brockville Asylum in 1894, Cobourg Asylum in 1902, and Penetanguishene Asylum in 1904. The Cobourg institution, for female chronic patients, was created by the conversion of Victoria College, the scholastic headquarters of the Methodist community prior to federation with Toronto University, into a hospital for the insane; and the Penetanguishene Asylum, which is for chronics of both sexes, was formerly a reformatory for boys.

Ontario also possesses an asylum for idiots. It is situated at Orillia, where it had its inception, in 1876, in a building originally designed for a hotel. This structure was replaced by a new modern establishment in 1887.

In the Province of Lower Canada, now Quebec, the Quebec Lunatic Asylum, formerly known as Beauport Asylum, is the oldest of the institutions for the insane, the progenitor of the present structure having been opened, during 1845, in the old manor-house of the Seigneur of Beauport, which stood about a mile from the present establishment. Its creation was due to Dr. James Douglas, an uncle of my immediate predecessor in this chair, Dr. Joseph Morrin, and Dr. Charles J. Fremont, but it is now the property of the Sisters of Charity.

The second of the Quebec asylums, L'Hôpital St. Jean de Dieu, or, as it is usually called, Longue Pointe Asylum, is situated a few miles east of Montreal, and also belongs to the Sisters of Charity. It originated in a very humble way in 1852, its capacity at that time not exceeding twenty-five patients. This being found quite inadequate to meet the ever-increasing demands upon their charity, the Sisters, with the sanction of the government, determined to take up the work of caring for the insane on a greatly enlarged scale. The result was the erection of a new St. Jean de Dieu Asylum, which was opened in 1875. This institution was completely destroyed by fire in 1890, no less than seventy-five patients and five Sisters losing their lives in the conflagration. Undeterred by this disaster, the Sisters lost no time in beginning the erection of the third St. Jean de Dieu Asylum. This, the present establishment, which is fully up to date in construction and equipment, was opened in 1901.

The third Quebec institution, rightfully called the Protestant Hospital for the Insane, though generally spoken of as Verdun Hospital, was founded by a number of the charitably disposed Protestant citizens of Montreal for the relief of their co-religionists then confined in Beauport and Longue Pointe asylums. It was opened for the reception of patients in 1890.

Quebec has in addition two institutions which receive idiots as well as some aged and infirm paupers. These are L'Hospice St. Julien, located at St. Ferdinand d'Halifax, and Baie St. Paul Asylum, situated at the Baie St. Paul. Both belong to the Sisters of Charity, the former having been opened for the reception of idiots in 1873, the latter in 1890.

Prince Edward Island stands fourth, and Nova Scotia fifth on the list with regard to the date of beginning special provision for the insane. The hospital of the former dates back to 1847, and of the latter to 1858, since which time Nova Scotia has increased its accommodation for the mentally defective by the creation of a system of county asylums, and combined county asylums and poorhouses. An interesting point in connection with the Nova Scotia asylum is that

to it pertains the honor of having had its site selected by the well-known philanthropist, Miss Dix, of whom it is said in Tuke's "Dictionary of Psychological Medicine": "Although, in every country, men and women and the medical profession have been ready to promote the interests of the insane, the name of Dorothea L. Dix stands foremost among all. Her efforts in improving the condition of the insane were not confined to her native State of Massachusetts, but extended to other States and distant lands. Her life was devoted to their interests, and it is stated that no less than thirty asylums owe their establishment directly or indirectly to her persistent efforts."

The first Manitoba asylum, now located at Selkirk, was originally established in 1871, at Lower Fort Garry, in connection with the penitentiary. One of the old stone storehouses of the Hudson's Bay Company, formerly used for the confinement of Lepine, the notorious Louis Riel's Adjutant-General, was fitted up for the purpose. The second asylum, situated at Brandon, began work in 1891.

The year 1872 witnessed the birth of the British Columbia institution, when an ancient wooden building on the Songhees Indian Reserve, outside the city of Victoria, originally built for a smallpox hospital, was reopened to receive lunatics. The population having outgrown these primitive quarters, it was decided to erect a new aslyum on the main land, close to the town of New Westminster. This was done and the patients removed thereto in 1878.

Of the superintendents connected with the bygone struggles of these beneficent institutions much might be said, but the limited time at my disposal forbids the eulogiums they so justly deserve, even were my pen equal to the task. No words of mine could do justice to such men as Dr. Workman, easily "*primus inter pares*," and fittingly styled by Dr. Tuke, "The Nestor of Canadian alienists"; Dr. Henry Landor, whose rare qualities of heart and mind fitted him so eminently for his position; Dr. R. M. Bucke, to whom is due the introduction of the non-restraint system into Canada; Dr. W. G. Metcalf, who, by his sad and untimely death, added another to the goodly list of physicians who have perished at the hands of those whom they sought to benefit; Dr. J. R. DeWolf, who was foremost in the early care and treatment of the insane in Nova Scotia; Dr. E. E. Duquet, who died worn out by his labors in striving to reform the Longé Pointe Asylum, and Dr. A. Vallée, whose advanced views did so much to improve the Quebec Asylum. The blessed results of the labors of such men can never be fully estimated, their works being truly

"Deeds which are harvest for Eternity."

STATUS OF THE INSANE.

At the present time Quebec is the only one of the provinces of the Dominion in which there is no State institution for the care of the insane. Though vastly improved in every respect and much more strictly supervised by the government than when Dr. Tuke visited them, in 1884, and so graphically portrayed the then existing evils, the two largest hospitals, St. Jean de Dieu and Beauport, are still proprietary establishments, and, as such, still open to the criticism thus forcibly expressed by that distinguished alienist in his work, "The Insane in Canada and the United States," "Far be it from me to attribute to these Sisters of Charity any intentional unkindness or conscious neglect. I am willing to assume that they are actuated by good motives in undertaking the charge of the insane, that they are acute and intelligent, and that their administrative powers are highly respectable. Their farming capacities are, I have no doubt, very creditable to them. It is not this form of farming to which I have any objection or criticism to offer. In the vegetable kingdom I would allow them undisputed sway. It is the farming out of *human* beings by the Province to these or any other proprietors against which I venture to protest. . . . It is a radical defect—a fundamental mistake—for the Province to contract with private parties or Sisters of Charity for the maintenance of lunatics. Whatever may be the provision made by private enterprise for patients whose friends can afford to pay handsomely for them, those who are poor ought to have the buildings as well as the maintenance provided for them by the legislature. They are its wards, and the buildings in which they are placed should belong, not to private persons, but to the public authorities, with whom should rest the appointment of a resident medical officer."

No less pronounced in his condemnation of the "farming out" system is a later writer, one of our greatest authorities on all appertaining to insanity and the care of the insane, Professor Kräpelin. This world-renowned alienist says of it, in an article published some five years ago: "It is not only unworthy of the State, but in the long run it is also dangerous to entrust the care of such institutions to promoters, who are working only on their own responsibility, be they laity or clergy. The best ordinances of State supervision cannot do away with the danger which attends the transference of the insane from the care of the public officials to that of private individuals. Even if State inspection were well carried out, which cannot be guaranteed, only the more apparent abuses could be guarded against. The management of the institution would still be carried out in accordance with the particular views and wishes of those who were in charge and, as a rule, to the disadvantage of the patients."

Following the publication of Dr. Tuke's article, the Medico-Chirurgical Society of Montreal held a meeting at which, among others, the following resolutions were unanimously passed:

"That the 'farming' or 'contract' system

either by private individuals or by private corporations, has been everywhere practically abandoned, as being prejudicial to the best interests of the insane, and producing the minimum of cures.

"That in the opinion of this Society all establishments for the treatment of the insane should be owned, directed, controlled, and supervised by the Government itself, without the intervention of any intermediate party."

Spite of these and other vigorous protests the system remains unchanged, and before Quebec can be counted in the foremost line, where it ought to be, the Province must own as well as supervise its institutions for the dependent insane.

One outcome of the furore excited was, however, the founding of the Protestant Hospital for the Insane, an incorporated charitable institution, which, while paid by the Government for the maintenance of public Protestant patients, is safeguarded by the leading clause in its charter of constitution. This stipulates that the conduct of the establishment shall be vested in a board of management elected by the governors, and that all moneys received by the corporation, from whatever source, shall be expended upon the institution and its inmates. As a matter of fact, ever since the opening of the hospital, the per capita cost of public patients therein has not been less than fifty per cent. more than the Government allowance for their keep, the difference having been made up by the revenue derived from private patients and the bequests of the charitably disposed.

The Province of Nova Scotia, though possessed of as well managed a State asylum as could be desired, is yet behindhand in that it has, since 1886, sanctioned the erection of county asylums, and, in many cases combined county asylums and poorhouses. To these can be transferred the harmless insane from the provincial institution, and to them can be sent direct, idiots, non-violent epileptics and cases of chronic insanity refused admission on statutory grounds to the State Asylum. At the present time there are eighteen of these structures, which, according to the report of Public Charities of 1904, house sane adults, children, insane patients, imbeciles and epileptics. Each is governed by a committee, the immediate management being entrusted to a keeper and a matron, and there is a visiting medical officer attached. These establishments have been erected in pursuance of a plan outlined by Dr. Reid, formerly Superintendent of the Provincial Asylum, though a Nova Scotia medical friend of mine, well acquainted with the system, contends that it was invented by the devil. The scheme was necessitated by the pressing need of additional room for the insane, and the financial inability of the Province to undertake the erection of another public hospital. It is only fair to Dr. Reid, however, to state that this was but one of four alternative suggestions made by him, and that it was the one he considered the least desirable, although the cheapest way to provide the required accommodation.

That county care is cheaper I will not gainsay, but does it best meet the demands of humanity, which, after all, is the true standard to be adopted by any right-thinking community? That it does not seems to be the general trend of the most advanced scientific opinion, and the following resolution adopted at the sixth meeting of this association, held at Philadelphia in 1851, still holds good:

"Resolved, That it is the duty of the community to provide and suitably care for all classes of the insane, and that in order to secure their greatest good and highest welfare, it is indisputable that institutions for their exclusive care and treatment, having a resident medical superintendent, should be provided, and that it is improper, except from extreme necessity, as a temporary arrangement, to confine insane persons in county poorhouses or other institutions, with those afflicted with or treated for other diseases or confined for misdemeanors."

Not a few of the chronic insane are as difficult to manage as the acute, and such being the case, it is hard to imagine any system of county care where abuses will not creep in as a result of the desire to lessen the per capita cost and the absence of constant medical supervision. As practised in the State of Wisconsin it seems to be as well conducted as it is possible for such a system to be, and yet Dr. Burr, our worthy Vice-President, who is a just and honest man as well as a careful observer, after a personal inspection of the system there, published, in the October, 1898, number of the *American Journal of Insanity*, a scathing denunciation of its inefficiency.

Many of the worst horrors connected with the treatment of the insane during the last half century were consummated within the walls of county almshouses. In New York, where the practice of transferring cases which failed to recover in a certain time from the Utica Asylum to the county poorhouses was in vogue for nearly thirty years, and where the county asylum system flourished for over eighteen years, the abuses which seem to be inseparable from almshouse and county arrangement so aroused public opinion that both methods were abolished. By the passage of the State Care Act of 1890, an act which affirms that the dependent insane are the wards of the State, and that their interests and maintenance should be confined exclusively to the State, New York justly earned the proud encomium that, "The leading chapter in the (past) century's history of the care and treatment of the insane in America will be the humane and progressive record of the Empire State."

The State of New Hampshire has also lately recognized the injustice of this method of caring for the insane, and, in 1903, passed an act abolishing county care, and providing for the removal of all lunatics confined in county almshouses to the State Hospitals within a period of six years.

That those connected with and so best qualified to judge of the working of the Nova Scotia system are not themselves enamored of it may be judged from the 1903 Report of Public Charities. Therein, the inspector, Dr. George L. Sinclair, an alienist of repute and a former superintendent of the Provincial Hospital, says:

"The plan of county care adopted in this Province has many grave objections. In a properly equipped and well-officered local asylum, reserved for the exclusive use of insane or imbecile inmates, the objectionable features are fewest. The scheme of associating in one house both sane and insane persons is the most objectionable and unsatisfactory.

"Unfortunately our law permits this to be done, provided the building is made suitable for both classes and for both purposes to the satisfaction of the Governor-in-Council. The difficulties to be overcome to make such a plan of care unobjectionable pertain quite as much to the structure of the municipal mind as to that of the building.

"It is most unfair to the sane members of such a household, whose only affliction is poverty, to compel them to associate with the insane and imbeciles, who are not only irresponsible, but may be a source of positive danger to their companions in misfortune, and it is distinctly unjust to the insane inmates to attempt to care for them with the limited oversight and attention which the small staff of an almshouse can give.

"I have yet to find a single keeper or matron of an asylum to which the mental defectives are sent to associate with the paupers, whose experience in looking after the two classes is sufficient to give the opinion any value, who does not think the mixing of the two kinds of inmates most undesirable. When it is done there is either a dangerous amount of liberty granted the defectives or they are isolated and secluded to an extent that means positive neglect, and leads to distinct deterioration and the formation of bad habits. It cannot be otherwise. The staff of an ordinary almshouse usually consists of a keeper and a matron. The former has charge of the farm and the latter of the housekeeping. When at his work the keeper must either take the insane men with him or leave them at home. The first is often impracticable, and the second unsafe unless the patient is locked up. This more or less frequent seclusion always has an evil effect in causing the insane person to fall into bad habits. Sometimes most objectionable and severe mechanical restraints are used, and nothing but harm results."

In the Province of New Brunswick, it is much to be regretted that the Government, on account of the overcrowded condition of the Provincial hospital, is contemplating a resort to the Nova Scotia system. At the last session of Parliament legislation was passed providing for the examination of all patients therein by a Commission composed of the Medical Superintendent and two other doctors. When the work of the Commission, which began its labors in November last, is completed, a report is to be made to the Government with a view to the selection of those who, being supposed to be harmless, can be sent back to their friends or to the county almshouses. To carry out such retrograde legislation will be to sully the record of a Province which has heretofore always steadfastly declared against the incarceration of lunatics, even temporarily, in prisons or poorhouses—a Province which can boast with pride of having been the first of the British North American colonies to provide special accommodation for its dependent insane.

At present, in New Brunswick, perhaps the gravest existing defect in connection with the insane is the method, or rather lack of method, of commitment to the Provincial Hospital. The safeguarding of the liberty of the subject seems to be little heeded, and a patient can be conveyed to it with only a line from a doctor. No thought is given to advising the hospital authorities beforehand that a patient is coming, and often no history whatever of the case is furnished. The Medical Superintendent, however, informs me that this matter is to be remedied at once, and that the present year will see the manner of commitment more in consonance with the modes adopted in other civilized countries.

Ontario, as the wealthiest of the Provinces, has, of course, been able to outstrip the others, and in its care of the insane has always endeavored to keep up with the advance of science. Its asylums are State institutions in the fullest sense of the word. In the majority of cases the patients are maintained entirely at Government expense; in other cases, where able to do so without hardship, the friends are charged a rate that covers the bare cost of keep.

While all its hospitals are good, Rockwood is certainly the foremost, ranking to-day among the most advanced institutions for the treatment of the insane in America. Whether it be that its presiding officer has a more persuasive tongue and so can better influence the Government, I cannot say, but assuredly it has accessories that are elsewhere lacking, to-wit, a beautiful nurses' home and several small cottages for the segregation of tuberculous patients. The varieties of employment provided for the patients are there, as they should be, numerous and diversified, and physical culture classes are one of the features of the establishment. In addition, those who have a taste for music are instructed in it under a qualified teacher, and there is also a school modeled after that in the Utica Asylum. At Rockwood, too, it is worthy of record, was established Canada's first training school for asylum nurses, and the first separate building, or infirmary, on the continent, for the treatment of lunatics afflicted with additional ailments.

Prince Edward Island has a Provincial hospital for its insane, but idiots and imbeciles are

sheltered in the Provincial poorhouse, those who become dangerous being transferred to the insane hospital.

In Manitoba and British Columbia the asylums are State institutions and well conducted, though, at present, sadly hampered by the constant and pressing necessity of providing sufficient room, owing to the mass of immigrants that has been flowing into those Provinces during the last two or three years. The Manitoba hospitals receive imbeciles, but idiots are sent to the Home for Incurables, also a Provincial institution, located at Portage la Prairie. British Columbia has no special provision for idiots or imbeciles. When utterly unmanageable at home they are received into the insane asylum.

The Northwest Territories, having no hospitals of their own, by special arrangement with the Dominion Government, all cases of insanity occurring in those districts are cared for in the Provincial asylums of Manitoba.

NUMBER OF INSANE.

In 1901, according to the census of that year, there were in the Dominion of Canada 16,622 persons of unsound mind, being a ratio of 3.125 per thousand, or about one in every 319 of a population numbering 5,318,606 souls, exclusive of the unorganized territories. Of these 16,622 defectives, 10,883 were inmates of asylums or other institutions, a percentage of .642 under care.

The Provinces as regards the number of their insane stood as follows: Prince Edward Island, 361, a proportion of 3.496 per thousand; Ontario, 7,552, or 3.459 per thousand; New Brunswick, 1,064, or 3.213 per thousand; Quebec, 5,297, or 3.212 per thousand; Nova Scotia, 1,403, or 3.052 per thousand; Manitoba, 464, or 1.818 per thousand; British Columbia, 301, or 1.684 per thousand; Northwest Territories, 180, or 1.132 per thousand.

The following table shows the changes indicating increased custodial care, or otherwise, on the part of the several Provinces, in the decade extending from 1891 to 1901. By this it will be seen that there has been a marked advance in all with the exception of New Brunswick, which remains unchanged:

PROVINCES.	1891. In Asylum,	1901. In Asylum,
British Columbia	90 per cent.	94 per cent.
Manitoba	55 " "	77 " "
New Brunswick	52 " "	52 " "
Nova Scotia	36 " "	71 " "
Ontario	58 " "	69 " "
Prince Edward Island	38 " "	61 " "
Quebec	50 " "	58 " "
Northwest Territories (Housed in Manitoba Asys.)	..	58 " "
Canada	54 per cent.	66 per cent.

With respect to custodial care, British Columbia ranked first, having under care, at the close of 1901, no less than 94 per cent. of the total number of those mentally incapacitated. Manitoba came next, with 77 per cent. in safe keeping. Nova Scotia stood third, with 71 per cent. sheltered. Ontario was fourth, with 69 per cent. in asylums. Prince Edward Island was fifth with 61 per cent. provided for. Quebec and the Northwest Territories were equal, with 58 per cent. under care, and New Brunswick was eighth, with 52 per cent. housed.

INCREASE OF INSANITY.

In spite of the provision made for the care of the insane, from every Province comes the cry for additional accommodation. Year by year the number of lunatics, imbeciles and idiots to be supported and cared for by the State is being largely augmented, and it has become a burning question whether something cannot be done to lessen an evil which imposes upon the community an enormous load of taxation for the maintenance of a large and constantly increasing multitude of those mentally afflicted. Canada, in common with the rest of the civilized world, has of late years shown a decided increase in the percentage of her insane population. Of course it is easy to be led astray by statistics compared without just qualification. The very agencies created for the care of the insane lead to an apparent increase in their number. With well-appointed asylums, conducted on enlightened lines, aided by Government grants and private charity, hundreds of patients who might otherwise be uncounted, leave their homes to swell the enumeration of the insane. Still, with all allowance made for this, it is the consensus of opinion that insanity is on the increase in Canada as elsewhere. That such is the case is fully borne out by the census returns, which, though lessened in validity by the fact that the figures they furnish are in great measure dependent on voluntary information, are yet in this case a fair index of the true state of affairs, because any false statements made would be in the line of lessening the number of defectives. From this source we find that, while in 1891 there were 13,342 insane persons in a population of 4,719,893, in 1901 there were 16,662 in a population of 5,318,606, being an increase, in ten years, of nearly twenty-five per cent. in the number of lunatics, whereas the increase of the total population was less than thirteen per cent.

The causes of this increase are manifold. The methods of modern life and the modern race for wealth undoubtedly play an important part in it. Our high-pressure civilization does not come to us without attendant woes. With the change and increased comfort in the mode of life of the great bulk of the people, their susceptibilities have been augmented, and their nervous systems have been laid more open to the unkind influences of material and moral forces. But while these and other causes play a part in the production of mental disorder, it is a small one in comparison with that played by heredity. From time immemorial it has been recognized that the great predisposing cause of insanity is hereditary taint, and as time rolls on and we are able to make more careful

inquiry into the influence of hereditary predisposition, the truth of this old-time belief becomes more and more evident. Unfortunately, we are not in a position to say exactly what amount of the mental obliquity met with is due to transmitted weakness. The statistics of heredity vary widely, and this variation is chiefly in direct ratio to the prevarication practised by the relatives of the insane. Not one of us but is well acquainted with the way in which people, even in the lower ranks of life, endeavor by every means to keep us ignorant of what they consider to be a stigma on the family. Almost every authority on mental diseases has commented on this, one writer going so far as to compare the difficulty experienced in getting at the truth in such cases to that which might be expected in dragging from an erring woman a confession of her frailty. Why brain disease should be regarded as more disgraceful than disease of the lungs or any other organ of the body, or why the fact of insanity being in a family should be looked upon by the public as tantamount to an acknowledgment of criminality, is hard for us to grasp. Such, however, is the fact, and until the masses are educated out of such erroneous beliefs, friends will continue to lie about their antecedents most unblushingly. Often I have known cases where the relatives have positively asserted that there was no trace of insanity in their family history, and often I have afterward discovered that it had been well marked for generations. I well remember a lady, widely known for her Christian principles, coming to see me about receiving her daughter as a patient. A prognosis in the case was of importance, and I was asked to give as definite a one as possible. Naturally I asked as to any possible hereditary taint. My lady was firmness itself in her denials. In the course of further conservation, however, she happened to mention that her brother, who had been very fond of the insane girl, was dead, and added, "Perhaps it's as well after all that he is." It struck me at once that there must be something behind this expression of opinion, and my question, "Why so, Madam?" elicited the answer, "Well doctor, you see for over a year before my brother shot himself he was always worrying about Mary's future welfare." Needless to say the hospital registers showed heredity as a definite predisposing factor in the case.

But it is unnecessary that I should dwell upon the question of heredity as a cause of the increase of insanity. It and the marriage question were fuly and ably discussed by Dr. Blumer in his presidential address delivered at Washington two years ago. I shall but strengthen, if that be possible, what was then said, by a quotation. It is from an address on the prevention of insanity given by Dr. G. F. Blandford, as President of the Psychological Section of the British Medical Association, in 1894. On that occasion Dr. Blandford stated: "I have long been of the opinion that insanity is to be prevented chiefly by limiting the propagation of this most fearful disease through the union of affected persons. I am convinced that the only way to really diminish and finally stamp out insanity is by so educating public opinion, that those who have been insane or are threatened with insanity, shall, in the face of such public opinion, abstain from bringing into the world children who must certainly contain in them the potentiality of insanity, and so will hand on the heritage from generation to generation till the race dies out."

(To be Continued.)

MEDICAL PROGRESS.

MEDICINE.

Bright's Disease.—Bright's disease, according to A. C. CROFTAN (*Journal A. M. A.*, June 24), is a toxemia presumably of intestinal, and, by implication, of hepatic origin, involving, primarily, the cardiovascular apparatus, and secondarily, many organs of the body, including the kidneys. Causal treatment, therefore, in his opinion, must be directed toward the digestive disorders that underlie most causes of the disease. In some cases, however, there are, he believes, obscure metabolic perversions, hereditary or neurotic, it may be, that we do not understand, and this class is less manageable and its treatment is necessarily only symptomatic. Symptomatic treatment is not, however, the conventional treatment of the kidneys, but the treatment of the heart and arteries. When nephritis is established, it of course calls for treatment, but nephritis may not occur till late in the disease. The general measures of maintenance of the nutrition by regulated diet and the avoidance of nervousness, care, worry and fear are naturally of paramount importance. Croftan advises the use of intestinal antiseptics, sulphocarbolate of zinc, sodium glycocholate and organic peroxides, a number of which are sold under various trade names, and which, he thinks, are useful in small doses, together with bismuth as a test for the presence of sulphur compounds in the feces. When the stools are not colored black by bismuth sulphide, it is an indication that the intestinal antiseptic is given in sufficient amount to check the putrefaction of albumin, and in most cases the indican and other aromatic urinary ingredients also will have disappeared. Small doses of digitalis, one drop of the tincture, t.i.d., are useful in rendering the heart less susceptible to the disturbing stimulation of circulating toxins, and may be given without danger of impairing the power of the heart to respond to larger doses in emergency. Schott's exercise treatment is very useful for strengthening the heart in Bright's disease when myocardial changes threaten, and far better than large doses of digitalis or other cardiac tonics. For reducing blood pressure nitroglycerin, or better, erythrol tetranitrate, is the orthodox remedy and can be kept up for a long time. Continuous vasodilatation, lowering blood pressure in the kidneys, reduces the albuminuria and enables the renal epithelium to regain its tone and to resume its functions. Other measures that aid are hot baths, rest in a warm bed and judicious life in a warm, dry climate, all favoring relief of arterial tension and rest to the heart. Croftan condemns kidney decapsulation as irrational in Bright's disease. In acute nephritis underfeeding is advisable, but in chronic cases the daily amount of feeding, expressed in caloric values, should

be inversely proportionate to the presumed duration of the nephritis. There is also no reason why a mixed diet may not be allowed in these cases, excluding only such foods as produce substances difficult of elimination by or irritating to the kidneys. A milk diet also is good in the acute disease, but injurious in chronic cases, and the excessive water drinking so often advised, he states, is irritating to the kidneys and injurious to the overtaxed cardiovascular apparatus. Sweating a nephritic patient may be of some value in relieving the patient of excess of water which the kidneys can not dispose of, but giving much water at the same time is irrational. The restriction or withdrawal of chlorides, on the other hand, is both practically and theoretically useful.

The Manner of Infection in Cerebrospinal Meningitis.—A valuable pathological study, based on a series of 30 autopsies, has been made by Westenhoffer (*Berl. klin. Woch.*, June 12, 1905). The results of his investigations seem to show that the point of entrance for the infectious germs is the posterior nasopharynx, and particularly the pharyngeal tonsil. The meningitis is at first invariably a basilar process and centers in the region of the hypophysis. It takes place in a lymphogenous manner. The involvement of the cranial cavity is analogous to the inflammation of the mucous membrane of the accessory sinuses connected with the nasopharyngeal space. A meningitis of this type never, or at least very rarely, occurs by the extension of an inflammatory process from the ethmoid cells. The writer claims that both adults and children who happen to be attacked by this disease show distinct evidences of the so-called lymphatic diathesis. The disease is due to the inhalation of the infectious organism and its prophylaxis is essentially hygienic. The meningococcus Weichselbaum-Jäger is found in the majority of cases, although it is by no means decided that it is solely and alone the cause of the disease. The fact that many other cocci are found with this coccus, either alone or in a mixture, makes it probable that all of these bacteria play only a secondary rôle in the etiology of the disease and that the real etiological factor has not yet been discovered. This seems to be analogous with the streptococcus infection in scarlatina.

Quinquaud's Phenomenon.—Recently Quinquaud described the following symptom as characteristic for alcoholism: The fingers of the patient to be examined are spread out and then placed perpendicularly upon the palm of the physician. After several seconds a decided crepitation will be felt by the latter, if the test is positive, even where the joints are absolutely normal. M. Herz (*Münch. med. Woch.*, May 30, 1905) has investigated the symptom in a large number of cases and concludes that the crepitation does not come from the joints but results from slight lateral motions of the tendons in their sheaths, set up by the involuntary muscular contractions so common in alcoholics. The symptom is present to a slight extent also in normal individuals.

Medical Phases of the Immigration Legislation.—V. G. Heiser (*Med. Rec.*, June 17, 1905) says that the act of 1891 was the first under which immigrants suffering from certain mental or physical conditions were absolutely excluded, and the law provided for the first time for the medical examination of all arriving aliens. The medical features of the immigrant legislation consist of two simple divisions, the first for those suffering from afflictions for which they are absolutely excludable and the second for those suffering from conditions which may cause them to be likely to become a public charge. From year to year it has been found desirable to augment the list of affections that come under both divisions of the law, and the last act pertaining to immigration, passed in 1903, still further increased the list of absolutely excludable diseases. In discussing the maladies on the absolutely excludable list which give rise to the greater number of rejections, the author says that trachoma easily ranks first, and favus is also of importance. Leprosy, active syphilis, and cases of tuberculosis with bacilli in the sputum, are also on the list. Epileptics, idiots, and the insane are specifically mentioned by law. The second class of diseases is a very long one and includes such conditions as valvular disease of the heart, hernia, chronic rheumatism, nervous affections, malignant tumors, defective eyesight, senility, etc. Persons suffering from temporary conditions are cared for until well in hospitals at the expense of the transportation company bringing them in. The author is in favor of the enforcement of the medical clauses of the immigration law in the Philippines, both from a humanitarian and a practical standpoint.

Menstrual Jaundice.—A few cases of jaundice recurring with every menstruation are reported, and there is a tendency to look upon this condition as a separate disease. L. Metzger (*Münch. med. Woch.*, June 13, 1905) has observed and previously described a case and now is so fortunate as to give the autopsy reports, as the pattient died of an intercurrent disease. A calculus was found wedged in the common duct which seemed to obstruct this passage completely, yet during life probably permitted the escape of sufficient bile to prevent stasis. With the congestion of the abdominal organs incident to menstruation, a true biliary stasis set in, so that some of the bile was readily absorbed by the lymphatics and icterus developed. Probably most cases reported depend on a similar cause, though there are no other autopsy records.

Intestinal Peristalsis.—Isaac Ott and J. F. Ulman (*Journal A. M. A.*, June 17) have studied the effects of various agents on the intestinal movements, confirming Ott's earlier findings that adrenalin arrests the pendulum movements and causes relaxation of the longitudinal musculature, and that splenic extract increases the peristaltic action both in frequency and force. Infusion of the pancreas was found to relax the muscles and slow the movements of the intestine, at the same time increasing the force of the contraction. Experiments were also made with other animal extracts, ovary, testes, parotid and mammary glands, pituitary, thyroid, brain and spinal cord, but they had no marked effect on intestinal peristalsis. The thymus seemed occasionally to increase its force. Sodium citrate increased the force of the contraction, which was slowed, weakened, and made irregular by the addition of calcium chloride, thus agreeing with MacCallum's observations. It is suggested, therefore, that calcium is indicated, in agreement with MacCallum's and with Loeb's theories of the action of the calcium ions, in persistent diarrhea of nervous and hysterical cases. A series of experiments were made testing the effects of various drugs, atropine, eserine, nicotine, muscarin, pilocarpine, strychnine, curare, morphine, etc., on intestinal peristalsis and also on their antagonistic action to each other, which are discussed in detail, especially their relations to the nervous supply of the intestine, and the conclusion is deduced that the automatic movements of the bowel are not myogenic, but are dependent, as shown by Magnus, on Auerbach's plexus. The action of certain organic bodies, bile, albumoses, peptones, leucin, tyrosin, was also tested; they all increased the force, and most of them also the frequency of the intes-

tinal movements. It is evident, the author remarks, that the products of proteid digestion are active stimulants of peristalsis. A good digestion predisposes to regular evacuation of the bowels, and this accounts for the habitual constipation of dyspeptics.

The Preservation of the Urine.—A large number of experiments (140) with different preservatives in urines of various compositions have been made by J. B. OGDEN (*Boston Med. and Surg. Journ.*, June 22, 1905), as the result of which he concludes that boracic acid is the most practical urinary preservative when used in the proportion of 5 gr. to 4 oz. of urine. Formaldehyde solution should only be used by the physician or a responsible person. It should be remembered that one drop of the solution will preserve about a pint of urine for a week and that a drop can be used in 4 oz. of urine without harm. Other substances than these two should not be used, as they either interfere with chemical tests and microscopical examination or are ineffectual as preservatives.

NEUROLOGY AND PSYCHIATRY.

The Prevention of Shock.—Assuming that surgical shock is due to the functional impairment or even exhaustion of the vasomotor centers through afferent impulses set up by trauma, exposure, etc., G. W. CRILE (*Journal A. M. A.*, June 17, 1905) discusses the means of its prevention, as well as that of hemorrhage, in various surgical procedures. Aside from the impulses mentioned, there are a number of important accessory causes to be reckoned with, he states, including psychic emotions, such as fear, hemorrhage, cold, acute and chronic infections, anemia, cachexia, etc., and age and sex. One or more of these is met with in every case. In operation on the head he emphasizes the importance of giving particular attention to circulatory conditions, of reducing to a minimum the exposure and manipulation of the meninges and the brain, and of having as complete control of the blood pressure as possible. He has clamped the carotids in 41 cases without unfavorable effects, and thinks it a valuable method of controlling hemorrhage in certain cases, together with the head-up posture and the use of the pneumatic rubber suit. In laryngeal operations, the danger of cardiac collapse can be avoided, he says, by previously giving a physiologic dose of atropin or by the local use of cocaine. In minor intrathoracic operations, when there is hampered respiration and seriously impaired circulation, Crile advises local anesthesia, and if further measures are needed they can be carried out later, after the patient's forces are recruited, under surgical anesthesia. The supreme importance of the respiratory action on the circulation must be kept in mind, as well as the danger of interfering with the large venous trunks. In abdominal operations, shock is in direct ratio to the trauma and exposure. In all time-consuming, exacting technics, he advises, no special contraindication existing, the use of morphine-ether anesthesia; either during the abdominal incision and the exploration and development of the operative field, morphine alone with slight or no ether accessory during the technic proper, and ether again in closing the abdominal wound. The region around the diaphragm is much more shock-producing than the lower abdominal tract, and he cautions the anesthetizer against being misled by the expiratory moan in these upper abdominal operations and overdoing the anesthesia. In anemia, cachexia and acute infections, the available vitality must be most carefully estimated and methods safely within its limits be adopted. The prevention of shock in operations on the extremities is narrowed down to two or three simple propositions, the minimum loss of blood and the least manipulation and force, and the "blocking" of the nerve trunks by intraneural injections of cocaine or eucaine. Crile summarizes his views as follows: "Every tissue and organ has a more or less individual shock-producing value and must be individually considered. The amount of shock produced by a given trauma varies according to the amount and special quality of its nerve supply and the number and intensity of the afferent impulses originated by the injury or operation. Cocaine or eucaine may wholly 'block' these shock-producing impulses. When one or more of the accessory causes of shock are present the highest possible tax is laid on the surgical judgment of the operator. A precise technic offering a minimum of exposure and trauma, grafted on a comprehensive grasp of all the factors entering into the operative consideration, are the ideals for which we must strive."

Neurasthenia Among the Laboring Classes.—Excellent facilities for the study of this subject are presented in one of the large German sanitaria, which have been studied by LEUBUSCHER and BIBROWICZ (*Deut. med. Woch.*, May 27, 1905). It was formerly believed that this complaint was relatively infrequent among this class, but this conception must now be revised. This may, of course, be due to the fact that the lower classes are now under more systematic medical observation, at least in Germany, than formerly, but the writers are rather inclined to the belief that it is produced by our changed social conditions. The work itself and the conditions under which it is performed are different. Either greater excitement or extreme monotony characterizes it. The struggle for existence often induces longer hours of work, and another important rôle is played by the disparity which exists between the intellectual equipment of the workmen, especially in the large cities, and the actual value of his work. Thus, the typesetters, often fairly well educated, pursue an occupation which is not only fatiguing but monotonous. Among those workmen where manual labor is of such a nature as to be productive of some degree of enjoyment, neurasthenic conditions are rarely to be found. The majority of cases were noted between twenty-five and forty-five years of age.

The Hypochlorization Method of Treatment for Epilepsy.—This method, also known as the "salt poor diet," has been in use at the Massachusetts Hospital for Epileptics for several years, and consists of the substitution of sodium bromide for the chloride in the patient's food. The claim is made that the bromide salt is rapidly absorbed and becomes part of the body tissue when administered in this way, and only about half the usual quantity is necessary. A. MORTON (*Boston Med. and Surg. Jour.*, June 15, 1905) reports on 24 patients who had been on this treatment for two and a half years. The diet consisted mostly of milk, eggs, bread and butter, gruel and soups, to which enough sodium bromide was added to amount to about 15 grs. per day. Sodium chloride was not, however, entirely excluded. The results were encouraging, the number of attacks decreased markedly and the patients were much quieter. Later on about one hundred other patients were put on the same treatment, who were getting a plain mixed diet. The greatest decrease in the number of convulsions occurred when the

women were taking about 35 grs. daily, but they objected to the salt and the ordinary sodium chloride was then mixed with it. An immediate increase in the convulsions was noted, although the number was still below the average seen with the regular diet. The writer concludes that this method controls the convulsions and requires only about one half the amount of bromide usually given. It has little or no effect on the general nutrition of the patient. It is apt to cause constipation. It does not furnish enough salt to supply the patient's craving. It may be used with success with intelligent patients, put is practically useless in the middle grade of epileptics. A modified salt poor diet, in which about equal parts of sodium chloride and bromide are used in the food, may be used to advantage with idiotic and demented patients if their diet can be controlled absolutely. Bromism was found to be comparatively rare.

THERAPEUTICS.

Radium in Cancerous Growths.—REPMAN presented two patients before the Society of Neuropathologists and Psychiatrists at the Moscow University (*Prakt. Vrach*, March 26, 1905), one of whom had a cancerous ulcer at the inner angle of the right eye. The treatment began December, 1903, weekly sittings, duration one hour. The bromide of radium was used; improvement was noticed after every application. For some reason the patient discontinued treatment after six weeks with the result that the condition became worse and the edges of the ulcer that were in a fair way of cicatrization reopened again. Treatment was instituted again with the result that the ulcer that resisted obstinately treatment for five years is now healed completely. The second case was that of a cancer of the breast for which the patient was operated on twice—nine and three years ago. In this case applications were made three times a week, and after twenty-six sittings the tumor seems to have disappeared and the patient regained perfect control of the shoulder-point (tumor located under left clavicle).

Relation Between Chemical Constitution and Diuretic Action.—Among the large number of diuretics, not the least important are caffeine and its numerous homologues. It has seemed almost imperative that a careful comparison of these bodies be made, with the idea of linking the diuretic effect to some particular molecular group or aggregate of groups. P. BERGELL and P. F. RICHTER (*Zeitsch. f. Exp. Pathol. und Therapie*, Vol. 1, No. 3) compared a group of compounds which are hemalogues of caffeine, in which one of the three methyl groups is substituted by an ethyl radicle. These are, therefore, three isomeric compounds having a purin nucleus. Caffeine is trimethylxanthin, and the other compounds are ethyltheobromin, ethylparaxanthin, and ethylheophyllin. All of the three latter have a marked diuretic effect, but ethylthrophyllin has an effect less than that of ethyltheobromin. In substituting the ethyl-radicle and other alkyl radicles, such as propyl, butyl and amyl, the authors find that these all have a diuretic action, but this is not as marked as that of the ethyl compounds. The length of the side-chain diminishes the diuretic effect.

Rectal Injections of Large Doses of Sodium Salicylate in Cerebrospinal Meningitis.—A. SEIBERT (*Med. Rec.*, June 17, 1905) believes that the administration of large doses of sodium salicylate, given by rectum to avoid gastric disturbances, forms the most satisfactory plan of treatment for this disease. Tapping the spinal canal by lumbar puncture may be of great value in some cases by relieving pressure, but it is not curative, and injections of antibacterial fluids into the spinal canal never reach the organisms they are intended to destroy. An effective remedy for cerebrospinal meningitis must travel the same road which the infectious germ has taken through the blood current. Salicylates have been used before in this condition, but in doses that are entirely too small. Five cases are described in which the use of large doses of the drug appeared to exert a very powerful curative effect. According to the age of the patients, sodium salicylate was given by rectum in fifteen grain doses dissolved in a tablespoonful of water, at intervals of from one to eight hours, the salicylization being gradually reduced as improvement followed. In one case, that of a boy aged four and a half years, who had had the disease for seven weeks some months previously and presented numerous sequelæ such as contractures, hemiplegia, strabismus, etc., very remarkable improvement followed the treatment, though it was begun only at so late a date. In a tuberculous case the salicylate did not appear to be effective. The author urges those who have charge of large numbers of cases of the disease to give a trial to this plan of treatment which he is convinced is of value in all cases where serous, not purulent, exudate forms.

Treatment of Inoperable Cases of Malignant Disease of the Orbit.—C. S. BULL (*Med. Rec.*, June 24, 1905) says that while malignant disease of the orbit which has apparently not originated in or involved the adjacent sinuses should be extirpated by the knife as soon as possible, the consensus of opinion seems now to be that when the neighboring sinuses are involved a complete removal of the growth is impossible, a recurrence of the growth is certain to appear, and with each repetition of the operation the return of the disease is hastened, and the life of the patient is by just so much shortened. On the other hand, in view of what we actually know of the action of the X-rays, it would seem not only wise, but our duty, after such operation by the knife as may be necessary, to expose the parts a certain number of times to the X-rays, in order, if possible, to destroy isolated cells or aggregations of cells in the neighboring parts which cannot be reached by the knife. It is stated on good authority that there has been a marked diminution in the death rate following operations on patients so treated. The author's experience, based on his own cases, has satisfied him that the X-rays are of value in removing the pain so constantly complained of, and he, therefore, believes that the treatment is to be recommended in inoperable cases because it relieves much of the patients' suffering, and thus may prolong their lives. It would seem that the more recent and superficial a malignant growth is, the more rapid and favorable are the results from X-ray treatment, but it takes time to prove the ultimate good results. The author presents the detailed reports of ten cases from his own private practice, in which the X-ray treatment was employed after excision by the knife. Of these ten cases, two were very much improved if not apparently cured, and of these two one was an epithelioma and the other a carcinoma. The remaining eight cases, in which no demonstrable effect was produced by the X-rays, were all sarcomata. In all but one of these the pain was more or less effectually relieved. No untoward results of the action of the rays were observed in any of the cases.

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No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, AUGUST 19, 1905.

THE PHARMACOPOEIA OF 1900.

ON September 1, 1905, the Eighth Decennial Revision of the Pharmacopœia of the United States of America becomes the official guide to physicians and pharmacists of this country.

The present edition has been unduly delayed. The reasons are not far to seek, but not the least was the untimely death of Dr. Charles Rice, chairman of the Revision Committee, at the very outset of the labors of the Committee on Revision.

It has been a standing reproach to the medical profession in general that they have taken little interest in this important work, but fortunately this is fast becoming a matter of history, and the time we hope may not be far distant when the Pharmacopœia will be a living part of every practitioner's armamentarium. The flagrant features of the patent-medicine evil, so far as it is fostered by the physician himself, will cease to exist when he is better acquainted with this book.

The present edition represents in the aggregate an immense amount of labor. No one who has not served on the Revision Committee has the slightest conception of the gigantic task involved in putting this work through, and the profession little realizes the debt that it owes to the sacrificing members of this committee. To utilize it to the full is to express in small measure the sense of that obligation.

It is impossible to more than indicate some of the important additions and changes that are here found when compared with the edition of 1890. We hope to present from time to time some of these to our readers. A few of the more striking features may be mentioned and attention further called to a useful Bulletin of the Public Health and Marine Hospital Service No. 23, under date of August 1, written by Drs. Reid Hunt and Murray Galt Motter on the changes found in the new edition.

We would call particular attention to two most important changes, viz.: Tincture Aconite is now 10 per cent., having been reduced from 35 per cent., and Tincture Strophanthus has been increased to 10 per cent. (formerly 5 per cent.), thereby creating a source of possibly grave error on the part of either prescriber or dispenser, unless the prescriber plainly states which tincture he desires, by appending the title U. S. P. 1900 (or U. S. P. 1890, should he desire the stronger preparation). These remarks apply equally to several of the other tinctures, notably:

	Per Cent. Now.	Per Cent. Formerly.
Belladonna leaves	10	15
Cannabis indica	10	15
Colchicum seed	10	15
Digitalis	10	15
Gelsemium	10	15
Hyoscyamus	10	15
Lobelia	10	20
Calabar bean (Physostigma)	10	15
Stramonium	10	15
Veratrum	10	40
Syrup ferrous iodide	5	10

Tinctures Nux Vomica, Opium and Opium deodorized, remaining as before, 10 per cent. These changes are in accord with the recommendations of the Brussels conference as to uniformity of strength of potent remedies.

Among other changes which will prove of interest, the admission of Phenacetine, Sulfonal, Trional, Aristol, Urotropin, are to be noted. They should be prescribed for by their official names.

Several new galenical preparations are important: Cataplasm of Kaolin, Elixir, Glycerole and Syrup of the Phosphates of Iron, Quinine and Strychnine, Emulsion of Turpentine, Antiseptic Solution, Compound Solution of Cresol, Solution of Sodium Phosphate, Compound Laxative Pills (A. S. B. and I.), Tincture of

Gambir Compound (to replace Tinct. Catechu Co.), as well as several others.

For the first time, and a highly commendable innovation, dosage is admitted to the Pharmacopœia under the following distinct declaration, "That neither this Convention, nor the Committee of Revision created by it, intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed them whenever in his judgment this seems advisable." Anti-diphtheritic serum, and also Desiccated Suprarenal Glands and Desiccated Thyroid Glands, are new.

Several changes in nomenclature are manifest, Acidum Arsenosum and Acidum Chromicum becoming Arseni Trioxidum and Chromii Trioxidum. The name Acidum Carbolicum has been dropped, "Phenol," the more correct chemical name, replacing it.

Cocaine, Morphine, and Quinine Hydrochlorates now become Hydrochlorides, and Sodium and Zinc Sulphocarbolates are now respectively Sodium and Zinc Phenolsulphonate.

The cumbersome nomenclature of the fluidextracts is simplified and they are now all written "Fluidextractum," thus avoiding the possibility of an error on the dispenser's part should the "Fluidum" be omitted by the prescriber.

These constitute but a few of the important modifications; of the refinements of tests, standards for purity, simplification of assay processes, standardization of potent remedies, etc., we cannot at this time speak. The work is a notable one, and the Committee of Revision is to be congratulated on the completion of their task. The Eighth Decennial Revision is an honor to its compilers.

NEWER IDEAS ON THE FUNCTIONAL TOPOGRAPHY OF THE BRAIN.

IN the quarter of a century that has elapsed since Fritsch and Hitzig first worked out the localization of motor functions in the cerebral cortex, although but a comparatively small part of the convexity of the hemispheres of the cerebrum has been explored, the facts discovered have certainly been of incalculable value from the viewpoints of diagnosis and treatment. The attention of investigators has been mainly riveted on the cerebrum, and to this has been accorded, at the expense of other parts of the brain, an influence altogether too predominant in the activities of this organ. For it appears in the light of the most recent investigation that other parts of the brain are likewise the seat not only of important motor functions, but also of the highest psychic activities.

It is well known that among the lower animals deprivation of the cerebrum does not abolish some of the very complicated motor mechanisms. Thus, in birds the centers that control the intricate movements of the eyeball are located in the corpora quadrigemina. A number of observers, among whom may be mentioned Sherrington, have noticed that in lesions or destructions of the cerebrum a well-marked muscular rigidity occurs. This is supposed to originate from centers situated in the mid-brain, which are normally the source of motor impulses and whose activity is under the inhibitory control of centers situated in the cortex. This form of muscular rigidity is observed in many diseases involving the cortical region of the cerebrum and the path leading to and from it.

F. H. Thiele (*Journal of Physiology*, July 13, 1905) has discovered in the posterior part of the optic thalamus, centers which, he believes, control the coordinated movements of walking. The nervous impulses emanating from these centers are independent of the pyramidal tracts, for the complete degeneration of the latter does not affect the functional efficiency of these centers. There are other centers in the optic thalamus which exert an inhibitory influence over the motor cells in the spinal cord.

This same observer also maintains that the cerebellum is the seat of important motor mechanisms. The sum total of the scant knowledge which until quite recently has been garnered from the study of the functions of the cerebellum, has been that this no insignificant part of the cranial contents exercises a coordinating influence over muscular contractions, or, in other words, contains the centers of equilibrium. This knowledge has been derived chiefly from clinical observation. Thiele has found that the cerebellum through its peduncles governs the skeletal muscles and is capable independently of producing movements, particularly those of the trunks and girdles. The author concludes from his experiments that movements of great complexity, such as those of progression, can be carried out in the absence of the cerebral cortex altogether. It is noted that the muscular mechanisms centered in the optic thalamus are of

wide spatial distribution and employ the limbs of both sides and the trunk, while the cells in the cerebral cortex control only limited groups of muscles.

Of still greater interest are the results of the experiments recorded by G. Pagano (*Arch. Ital. de Biol.*, May 10, 1905). This author was able to map out distinct areas in the cerebellum, and to show that these are in relation with movements of definite parts of the body. Although the results of his work leave room for considerable amplification, he has actually succeeded in proving the existence of cerebellar localization. This has already been foreshadowed by other observers, notably by Weir-Mitchell, thirty-six years ago, by Nothnagel, and by Ferrier.

The author's experiments were performed upon dogs, and his technic was so novel as to deserve mention. In order to excite the cerebellar cortex, he injected into it small quantities of a week solution of curare. The dogs were not under the influence of any anesthetic. These injections were shortly followed by contractures of definite parts of the animal's body, particularly of the limbs. In this way the author was able to map out distinct motor areas of the vermis, or the median lobe of the cerebellum, and of the contiguous parts. The character of the movement differs markedly from that obtained by a similar stimulation of the cortex of the cerebrum. In the latter case the curare causes clonic contractions of the limb. In the cerebellum, the stimulation causes a steady contraction or attitude, which is most frequently one of adduction or retraction of the limb.

The movements evoked by stimulation of the cerebellum differ also from those produced by stimulation of the cerebrum, in being chiefly homolateral. In the former case, as in the latter, there is a gradual merging of one area into another. One remarkable series of results was obtained by stimulation of the anterior extremity of the vermis. This gave rise to unmistakable psychical manifestations in the animal. It became possessed of maniacal fury, which was intensified by the slightest tactile, visual, and auditory stimuli, such as a breath, a gesture, or a whisper. This condition of the cerebellar cortex, which has thus been proved to be the seat of psychic centers, has been termed a veritable psychic strychninism. This is soon succeeded by epileptiform convulsions, then by a period of quiescence, and at last by death. There is no doubt, therefore, that the anterior part of the vermis contains centers whose stimulation leads to a state of mental exaltation.

That the cerebellum shares with the cerebrum the distinction in being the seat of psychic activities might have been inferred from previous observations on animals suffering from cerebellar lesions, in which vertigo and mental apathy had been noted, and in human victims of disease of the cerebellum, in which a certain intellectual decadence had been frequently observed.

One important difference between the motor centers of the cerebellum and those of the cerebrum is that the former are deeply situated, while the latter are placed near the surface. The question arises as to whether the cerebellum is normally capable of initiating mental processes, however subordinate these may be, or whether it produces a functional exaltation of centers situated elsewhere, or whether the phenomena of psychic excitation are the result of stimulating acoustic paths which are intimately connected with the cerebellum. The answer to this question awaits future investigation.

SUGGESTIONS IN TUBERCULOSIS.

IN the midst of the present reduction in the mortality from tuberculosis there are certain features that are not near so encouraging as might be expected from the improvement of statistics. Notwithstanding advances in knowledge, and especially with regard to the early diagnosis and management of tuberculous cases, not a few persons suffering from tuberculosis fail to have the disease process stopped by treatment even when carried out very effectually, but go on to increasing lesions and ultimately to fatal termination. Not infrequently it is said with regard to these patients that they lack resistive vitality. This is, however, an entirely hypothetical explanation, and so indefinite as to give no help to the practitioner. There is a growing feeling, moreover, in the minds of many specialists in tuberculosis that there are specific types of the disease which run very different courses from others, some of which are comparatively mild in character, while others are decidedly virulent.

Not that the element of individual resistance can be entirely eliminated in the study of tuberculous patients. Every one who has had much experience with tuberculosis can recall cases in

which the infection was traceable from one individual to another, and yet ran a very different course in each.

It has been the custom, especially of late years, to consider that the more virulent forms of human tuberculosis were more closely related to bovine tuberculosis than to other forms of the disease. If the observation of Dr. Woods Hutchinson, reported at the recent meeting of the American Medical Association, should be confirmed by others, and the suspicion of the nature of the affection observed be justified by subsequent observers, this opinion must have added credence. At the State Sanitarium not far from Portland, Oregon, Dr. Hutchinson has had under observation some eighty patients. Of these considerably more than one-third suffered from a very severe form of tuberculosis, which went on rapidly to a fatal issue. Nearly all of these patients have been associated for a considerable period with the care of cattle on the mountainous ranges of the State. Notwithstanding their outdoor life at considerable altitudes, they had acquired this virulent form of tuberculosis, the bacilli of which proved, on careful investigation, to be of the short, thick variety of the microorganism which is often seen only in connection with bovine tuberculosis.

Whether there are intermediate types of the tubercle bacilli lying between the human and bovine forms, yet virulent for man, is, as yet, under discussion. It seems probable, however, that many of the individual peculiarities of the disease could be best explained by means of some such variation of virulence. It has been noted over and over again that certain persons do not do well at the sea level, while others suffering from apparently similar forms of tuberculosis are unfavorably affected by altitudes. Whether there may not be some difference in the type of microorganism accountable for this remains to be investigated. It would certainly be of the greatest possible help in the treatment of tuberculous patients if, by means of the microscope, it could be recognized whether altitude or sea level were the best climatic condition for such patients from the very beginning, as actual observation is the only source of knowledge in this matter, and in this way at times very valuable time is lost at a stage of the disease when every day counts as regards the ultimate fate of the patient.

On the other hand, a very curious reflection is emphasized by some of the cases reported in the Northwest. It is well known that our American Indians, notwithstanding their outdoor life in tents, succumbed very promptly to tuberculosis in very large numbers whenever exposed to the disease. Tent life has become such a shibboleth in the treatment of tuberculosis by the outdoor method that it is surprising that this Indian experience has not made more physicians and patients realize that it is not the outdoor life alone, but the coordination of all proper hygienic conditions, that constitutes the essence of the modern successful sanitarium method of treating tuberculosis. The Indians were lacking in nutrition and in hygienic precautions against reinfection, hence the enormous death-rate. Undoubtedly, however, there was besides this a lack of resistive vitality.

In civilized communities the fact that, as the Germans say, we are all of us somewhat tuberculous, a fact that is demonstrated by the finding of tuberculous lesions in the lungs of more than three-fourths of those who die from other diseases and come to autopsy, seems to furnish to most of us a definite protective immunity against the disease, not absolute but relative, yet of sufficient power to enable us to resist serious invasion even after infection has taken place.

It has been suggested that in the Northwest those who have been living outdoor lives out of contact with tuberculous patients have lost something of this immunity of civilization, and so seem to suffer from tuberculosis in the virulent form exhibited by the American Indian. All of which would seem to be an added argument against those who would be foolish enough to make elaborate efforts to prevent the establishment of sanitaria in the vicinity of cities for the treatment of tuberculosis with the idea that the only thing that is to be feared with regard to this disease is the possibility of infection. The problem is by no means so simple as this, and much remains to be known before even its terms can be properly stated. Meantime this oldest of diseases presents some most fascinating aspects for investigation.

Yellow Fever.—The Marine Hospital authorities assure us that they will have control of the fever situation in the South within the next month. In view of the few new foci being discovered, we trust that their optimism may not be rudely shaken.

ECHOES AND NEWS.

NEW YORK.

To Avoid Typhoid.—Commissioner Darlington of the Health Department has put into a pamphlet certain information for the benefit of persons who wish to avoid typhoid fever. "Don't eat oysters in the months when typhoid is prevalent," says the pamphlet. "Neither is it good to bathe at beaches near where sewers empty. The primary rules of hygiene should be observed and carbolic acid used as a disinfectant around bathroom." It is advisable to have all well water in Brooklyn boiled. It is safer to boil all drinking water.

Improving Nassau Hospital.—Mrs. William K. Vanderbilt, Jr., has stated that she will provide a children's ward diet kitchen, dressing room and more private rooms for the Nassau Hospital at Mineola. The hospital was established through the efforts of a number of prominent residents of Nassau County and the members of the Meadow Brook and Rockaway colonies, who some years ago gave a horse show and a series of races in order to raise money for it. The improvements have already been begun. The addition is being built at the west end of the hospital. It will be about the size of the present building.

Filtration Figures.—In Health Commissioner Darlington's report to the Mayor on the question of filtration of the city's water supply, there are various comparisons of healthy cities with filtered water, with nearby towns, in which such precaution has not been taken. The most striking of these comparisons is that of Hamburg and Altona, adjoining cities, both of which take their water from the Elbe. Altona's supply is filtered. Hamburg's was not, previous to 1893. On the chart based on the statistics of thirteen years ago, in Dr. Darlington's report, the location of typhoid cases in these two cities is indicated by black dots. East of the dividing line, where the site of Hamburg is shown, the paper is black with dots. On the other side these marks can be easily counted at a glance. There is no question in Dr. Darlington's mind but that the water supply of New York should be filtered. The water sheds which supply Manhattan and Bronx extend over 360 square miles and a part of this area is within Connecticut, over which the State and city have no control. Concerning the cost of filtration, the Commissioner says that the estimates of the Commission on Additional Water Supply show that a suitable covered slow sand filtration plant can be built for the entire Croton supply of about five hundred million gallons daily for about $17,000,000 (at present wages and prices of material), with a total annual cost of operation, including interest, sinking fund, depreciation, etc., of about $900,000. The work could be completed within two years.

General Rules for Prevention of Mosquitoes.—The yellow fever scare at New Orleans has had one good effect, at least. It has caused the widespread publication of hygienic rules that ought to be observed by every owner or tenant of houses and lands throughout the country. Accepting the theory that the plague is transmitted by means of the mosquito, this advice has been tabulated and given out by the New Orleans health authorities:

"Clean out every place where water stands.

"So dispose of old tin cans, bottles, or what not, that rain cannot possibly be retained.

"Watch your roof gutters.

"Empty your rain barrel of water every week, or screen it closely with fine-meshed wire on top.

"Change the water every day in a drinking pan for dog, cat, or bird.

"Watch the watering trough near your stable.

"Fill a hole in a tree with soil packed tight, or with cement.

"In other words, get rid of, or coat with kerosene, all stagnant, standing water, and you will get rid of mosquitoes.

"If you have a playing fountain, put little fish, like minnows or goldfish, in the water, and they will eat the mosquito larvæ.

"If you have a sluggish brook or a stagnant pond near your house, spray kerosene or coal oil on the surface; this makes it impossible for the 'wigglers' to breathe when they come to the surface, and they die. The coal oil application is only necessary at the edges, and is good only so long as the oil film is unbroken."

Bearing in mind the assertion that New York is nearly as likely to suffer from the plague as New Orleans, if sanitary measures are neglected, these articles in the hygienic creed are worth preserving.

The Brooklyn Typhoid Situation.—To ascertain the causes of the prevalence of typhoid fever in Brooklyn, and particularly in the Bath Beach, Bensonhurst, Borough Park, and Bay Ridge sections, the Health Department is giving great attention to the water supply, on which, it is thought, a large share of the responsibility will fall. A house-to-house inspection of the Thirtieth and Thirty-first Wards is being made by six Sanitary Inspectors. Their object is to find out to what extent the residents are taking their drinking water from the public sources of supply, and to what extent from wells and cisterns. An investigation is also being made as to the quality of the water supply from all sources. Reports on all the phases of this investigation will probably be received by the Health Commisioner by Monday or Tuesday. The local physicians admit that typhoid is now almost epidemic in the Bath Beach and Bay Ridge districts. It was learned that for the five weeks ending last Friday forty-eight cases of proved typhoid were reported from the Thirtieth Ward alone. This record has since been growing steadily worse, and up to the present time about 300 cases have been reported, and the end is not yet. The principal causes of infection found by Dr. Berry were bathing in Gravesend Bay, overflowing cesspools, defective sewers, stagnant pools, into which the drainage of surounding districts is being collected, and wells and cisterns exposed to pollution. And his principal recommendations embody the following propositions: Prohibition of building new cesspools, inspection and enforced cleaning of existing ones, appeal for the improvement of roads, and the installation of sewers in the Bath Beach district, and for the improvement of the sewers of the Bensonhurst district; closing of public bathing establishments along the shore from Fort Hamilton to Ulmer Park, the placing of signs in conspicuous places warning the people of the danger of bathing in the bay along that district, the maintaining of a more rigid standard of cleanliness in regard to stables and general sanitary conditions in the ward. Dr. Henry V. Walker, the Chief Inspector, reports that the recomendations can not be carried out without the amendment of the present sanitary code. What is particularly wanted is a rule forbidding the establishment of new cesspools without permission from the department. Much of the trouble is the rapid growth of the Bath Beach and Bensonhurst districts, making it impossible to keep sanitary improvements on a level with the increase of population. The result is that in many houses the

same conditions exist which prevailed before the region had changed from a rural to an urban community.

PHILADELPHIA.

Duty Neglected.—Assistant Medical Inspector H. L. Sidebotham has been asked to tender his resignation. The Department of Health took the step after being satisfied that the inspector was wilfully neglecting his duties. One of the duties of the inspector was to make daily visits to certain schools; these he failed to make, but handed in a manufactured report each day.

Jail Overcrowded.—Lawyers, whose clients are suffering from the overcrowded condition of Moyamensing Prison, have pointed out that an epidemic of one kind or another may arise as a result. In order to corroborate their views and to give them better grounds upon which to work in bringing about relief these attorneys have obtained certificates from many physicians attesting to the conditions.

Young Doctors Receive License.—Shortly after the examinations, which took place in the latter part of June, there was a rumor current that the candidates for license to practise medicine under the old school would be re-examined owing to a change in the questions after they had been delivered to the examiners. The matter must have been settled in an amicable manner. Of the 466 candidates 320 passed, 56 failed, 4 were expelled for cheating, 4 withdrew and the decision was reserved for 82. The announcements were made in Atlantic City, where the papers were examined.

Benefit for Frankford Hospital.—While the politicians in the center of the city are playing a mild game of war the politicians of the northeastern section of the city are playing exciting games of baseball. The Republicans and the Democrats of Frankford have each organized a baseball team and since the organization occurred last year the one team is called the "Roosevelt" and the other the "Parker." The proceeds of the game will be given to the Frankford Hospital, consequently there was a large attendance. The proceeds are said to amount to several hundred dollars.

Bequests.—The will of Emma C. Harris, in disposing of an estate valued at $150,000, provides that it be held in trust for her two daughters and her grandchildren; but should the grandchildren die and not leave heirs the following institutions will be recipients: Episcopal Hospital, $25,000; the Home for Crippled Children, $5,000; the Home for Colored Crippled Children, $1,000; the Woman's Hospital, $2,000; the Philadelphia Protestant Episcopal Mission for two homes for consumptive men and women, each $25,000; the St. Christopher's Hospital for Children, $1,000; the Philadelphia Society for Organizing Charity, $2,000; the Franklin Reformatory Home, $2,000.

CHICAGO.

Report of Visiting Nurses' Association.—During the last month this association has cared for 853 patients and made 3,717 visits, besides caring daily for fifteen sick babies at the Fresh Air Station at Augusta and Noble streets.

Impure Milk in Illinois.—Milk conditions in Illinois towns outside of Chicago are causing a flood of complaints in the office of the Pure Food Commission. Because of the cramped facilites of the smaller cities they cannot exercise such close supervision as is possible in Chicago, and the milk now sold in some places is denounced as "rank poison." Formaldehyde is being used freely by country milk dealers, according to complainants.

GENERAL.

Diphtheria Epidemic at Port Republic.—The prevalence of diphtheria at Port Republic, N. J., has caused several of the surrounding towns to establish quarantine regulations. The disease became epidemic two weeks ago. Last week a camp meeting started in the town grove, but the health authorities feared it would help to spread the contagion and ordered it stopped.

Tropical Disease Experts Coming.—Among the passengers on board the Cunard Line steamship Campania, which sailed for New York last Saturday, were Major-Surgeon Ronald Ross and Dr. Rubert Boyce, professors in the Liverpool School of Tropical Medicine. Professors Ross and Boyce are going to New Orleans to assist the authorities there in dealing with the yellow fever outbreak.

Marine Hospital Physician Takes the Fever.—Dr. D. T. D. Berry, of the United States Marine Hospital Corps, in charge of the yellow fever work at New Orleans, was taken down last Friday with yellow fever. He has worked in the yellow fever epidemics in Cuba and was supposed to be an immune. He had charge of the inspection service in the Italian district. Dr. Berry was appointed from Virginia.

Typhoid in Washington.—The typhoid fever situation in Washington is growing worse. Since July 1 290 cases have been reported, of which 240 are now under treatment. A year ago to-day only seven cases were reported, making a total of 193 cases from the preceding July 1. A hopeful feature of the situation is that the new filtration plant is being put into operation. Water was started through two of the filter beds last week, and other beds will be put in commission as rapidly as finished.

Cumberland Valley Medical Association.—The third annual meeting of the Cumberland Valley Medical Association will be held at Holly Inn, Mount Holly Springs, Pa., Tuesday, August 29, 1905. The following program has been arranged: Address of welcome by James Evelyn Pilcher, M.D., of Carlisle, Pa.; address of President by V. Milton Reichard, M.D., of Fairplay, Md.; "A Case of Diaphragmatic Hernia of Twenty-one Years' Standing," by J. Bruce McCreary, M.D., of Shippensburg, Pa.; "Medical Lessons of the Far East," by James Evelyn Pilcher, M.D., of Carlisle, Pa.; "Our Relations to the World at Large," by Chas. F. Palmer, M.D., of Chambersburg, Pa., and a paper, subject to be selected, by Augustus C. Maisch, M.D., of Hagerstown, Md.

Big New Lake for New Jersey.—Next to the Great Meadows that lie between the Passaic and Hackensack Rivers in Hudson and Essex counties, the most prolific mosquito breeding grounds are the Great Piece Meadows, Hatfield Swamp, and the Troy, Whippany and Melapards Meadows that stretch along the Passaic River from Little Falls, in Passaic County, almost up to the city limits of Morristown. It is proposed to drown out the mosquitoes of this vast expanse of marshland by covering it with water and making another lake for New Jersey that will rival Hopatcong in size and natural beauty. Petitions signed by all the rich residents of the two counties urge the State to supply the water. A lake covering the meadows and marshes named would be fifteen miles long and six or seven miles wide. The surrounding country is the most picturesque in the State, and the petitioners say that the lake would soon be fringed with beautiful new settlements that will add many millions to the material wealth of the State.

National Standard Dispensatory.—A new edition of this standard work will be ready September 1, the date when the United States Pharmacopœia goes into effect. By authority of the Convention it will contain every article in the new U. S. P., as well as the explanations and instructions necessary to understand and apply the brief statements to which the official guide is restricted. The National Standard Dispensatory is a new work, a distinct improvement upon anything of the kind hitherto published. Its authors, Dr. H. A. Hare, of Philadelphia; Prof. Charles Caspari, Jr., of Baltimore, and Prof. H. H. Rusby, of New York, are all men of the highest eminence in their respective fields, and are all members of the Revision Committee of the U. S. P. They have carefully matured its plan so as to render the maximum service to both professions it interests, namely, Pharmacy and Medicine. It not only covers the new U. S. P. as aforesaid (and the chief foreign pharmacopœias as well), but the scarcely less important domain of the unofficial drugs and preparations so largely used. It offers full information regarding the pharmacognosy, the pharmacy, and the medical action and uses of all substances used in Pharmacy and Medicine at the present day. Pharmaceutical methods and products are covered, with descriptions of the most improved apparatus and tests.

Medical Society of the Missouri Valley.—The eighteenth annual meeting of this association will be held in Council Bluffs, Iowa, on Thursday and Friday, August 24 and 25, under the presidency of Dr. S. Grover Burnett, of Kansas City. The Grand Hotel has been selected as headquarters, while the sessions will be held in the auditorium at Lake Manawa, a beautiful resort near the city. This will afford a cool and comfortable place to enjoy the scientific program, which will be much appreciated. The evenings will be devoted to the various forms of amusement found at this park. Following is a list of the papers already promised: Discussion on Diabetes, led by Dr. LeRoy Crummer, of Omaha; Discussion on Pulmonary Tuberculosis, led by Dr. J. W. Kime, Fort Dodge, Iowa; Carelessness in the Use of the Curette, Herman E. Pearse, Kansas City, Mo.; Treatment of Patients after Intra-Abdominal Operations, Daniel Morton, St. Joseph; Practical Facts About Hernia, L. A. Todd, St. Joseph; Four Cases of Essential Anemia and Their Differentiation, W. O. Bridges, Omaha; Some Observations on Carcinoma of the Large Intestine, A. P. Condon, Omaha; Clinical Importance of the Diplobacillus of Morax-Oxenfeld, Harold Gifford, Omaha; The Prevention of Deformity, J. P. Lord, Omaha; Bodily Weight as a Factor in Prognosis in Nervous and Mental Disease, Frank Parsons Norbury, Jacksonville, Ill.; Some Non-Septic Causes of Fever after Labor, Mary Strong, Omaha; The Pharmacology of Antipyretics, A. L. Muirhead, Omaha; Ectopic Gestation, with Report of Cases, O. Beverly Campbell, St. Joseph; Paper, W. O. Henry, Omaha. A cordial invitation is extended to the profession.

Mosquitoes in London.—A plague of mosquitoes, says the *London Mail*, is widespread in London. A few years ago they were almost unknown, or made their appearance fitfully in the neighborhood of the docks and Fleet street, coming, it was supposed, among the rolls of paper. This summer they are being found all over the metropolis, and in many places have given considerable work to the medical practitioners and the hospitals. They are extremely plentiful along the line of docks. The lower part of the Thames valley seems full of them, and a suggestion is made that those brought from abroad on ships have found a congenial breeding place in the low-lying, marshy ground on the Essex shore. At the Poplar Hospital, recently, it was stated that they had many cases there every day, men, women, and children being alike victims. There have been for years past many patients treated at this hospital for mosquito bites, but this summer they are more numerous than ever. The dry, hot weather has favored the insects, or made them, so to speak, strong on the wing. They are now wandering far from their breeding places, and not a suburb is free from them. The West End has suffered but little from the plague, but they have made their appearance in force in the western, southern and northern suburbs. They are especially abundant in the neighborhood of Muswell Hill, where hundreds of cases are treated by the local doctors daily. Alexandra Park, Hornsey, Wood Green, and Bowes Park swarm with them. Their clear, ringing buzz, unlike that of any other insect, is heard nightly, and hundreds of people are suffering seriously from their punctures.

The Boston Day Camp for Consumptives.—An open air day camp for consumptives, said to be the first of its kind in America, and similar to those in Berlin, has been opened by the Boston Association for the Relief and Control of Tuberculosis. One of its marked features is its availability, for the camp is within two miles of the State House—located near the reservoir on the top of Parker Hill, Roxbury, the highest point of land in Boston. Except in the case of the indigent, a small fee is required from those who receive the benefits of the camp. Only early cases, where there is hope of cure or decided improvement, are taken. The camp consists of several tents in an apple orchard on the old Brown estate adjoining the reservoir property. Last week there were thirty-six patients present with the chances that another week would see the tents used to their full capacity (fifty). The patients coming in the morning are met at Roxbury by a conveyance which takes them up the hill to their destination. It is as a day camp that the undertaking is a pioneer in this country. The treatment consists of good, wholesome food, rest and continuous outdoor life. Each patient on arriving is given a luncheon of eggs, milk and bread. The mid-day meal consists of meat, vegetables, bread, butter, milk, and dessert. Another luncheon is given late in the afternoon. Games and newspapers and books are provided, the women bringing their sewing, and a large recreation tent is there for stormy weather. Lectures are to be given at intervals by leading physicians of Boston—lectures that will tell them how to properly ventilate bedrooms, how to eat and how to avoid communicating the disease to others. Dr. David Townsend, of Brookline, and Dr. Gardner W. Hall, of Boston, visit the camp daily, together with General Secretary Alexander M. Wilson, of the association. Dr. Edward O. Otis, Dr. Frederick I. Knight and Dr. Herbert C. Clapp, the association's consulting physicians, have had much to do with originating the camp.

Yellow Fever Infection Sources.—The epidemic of yellow fever at New Orleans, writes the *Evening Post*, has served to draw attention to sanitary conditions in Central and South American countries from which the disease might have been brought. In North America, outside the United States, yellow

fever has been reported at four places in Mexico, three places in Honduras, at Belize, British Honduras; at Guatemala, and at Panama, Colon, La Boca, Corozal, Empire, and Paraiso, on the Isthmus of Panama. San Pedro, Honduras, is the only one of these places in which an extensive prevalence is recorded. South American reports received since July 1 show the continued presence of the disease in Venezuela, Ecuador, and Brazil, the latest reports indicating 85 cases, with 11 deaths between May 27 and June 11, at Rio de Janeiro. July reports from outside the Western Hemisphere do not indicate the presence of yellow fever elsewhere than in Senegal, Africa, and Santa Cruz de Teneriffe. The general health report from the Isthmus of Panama, however, is not very encouraging. The Marine Hospital surgeon stationed there reports, under the dates of July 18 and 22, as follows: "Week ended July 17, 1905: In the two municipalities of Colon and Cristobal, which together have an officially estimated population of 9,932, the mortality has been very high for the first half of July. From July 1 to 13, inclusive, there has been officially reported 38 cases from the following causes: "Fever 3, pernicious fever 3, malaria 5, yellow fever 1, dysentery 2, diarrhea 4, tuberculosis 1, tetanus 2, beriberi 2, pneumonia 2, pleuritis 1, pulmonary inflammation 1, epilepsy 1, nephritis dropsy 1, athrepsia 1, yaws 1, unknown 4. Classified according to nationality, as follows: Native 14, Jamaica 13, United States 3, France 3, Spain 2, England 1, Canada 1. These figures would show an anuual death rate of over 90 per thousand. These statistics are compiled by the health officer from the reports of deaths made to the alcalde of Colon, and they show the same lack of care and display the same ignorance which characterized such statistics in former years. Comparison of the reports with the records of the Colon Hospital show that of the total deaths, 16 occurred in the hospital. The certificate of death is furnished the authorities by the hospital, but the occasional change or difference in the diagnosis cannot be explained. Malarial fevers have been very prevalent, and every section of the town, in fact, every house, swarms with *Anopheles*. The hospital records show an increase from 33 per cent. of all admissions in May to 50 per cent. in June. This does not include the out-patient department. It often occurs that patients, after an attack of yellow fever, return to the hospital with a severe malarial infection."

How the Pharmacopœia is Published.—Prior to the 1890 edition, the Committee on Revision of the U. S. P. sought a publisher as would an individual author of a new book. The Convention of 1890 made a new departure and instructed the Committee on Revision to secure the copyright for the revised Pharmacopœia. A contract was made with one firm to print the book and with another to act as selling agent. The Committee on Revision realized a good profit, which was used in covering the expenses of the work of revision and paying the members a small honorarium. The convention of 1900 inaugurated a new plan by adopting a constitution and by-laws and taking steps which resulted in securing papers of incorporation for the United States Pharmacopœial Convention. The constitution provides for a Board of Trustees of five (with the President of the Convention and Chairman of the Committee on Revision as *ex officio* members) in addition to the usual Committee on Revision. To the Board of Trustees is intrusted the transaction of all business, including the publication of the manuscript prepared by the Committee on Revision. The work has now reached that point where some idea can be given of the magnitude of the undertaking. The printing began in June, 1904, and progressed steadily until June 17, 1905. At that time, an imperfect sample copy was printed in order to obtain measurements for the size of cloth and leather sheets to be used in binding. The first complete unbound copy was furnished June 24. Then followed cloth-bound copies. The first edition consisted of 10,000 copies. This was printed in two runs, the first of 2,000 copies and the second, two weeks later, of 8,000 copies. This division of the edition was made in order that the Chairman of the Committee on Revision could be notified of typographical and other errors discovered in the 2,000 copies and have the corrections made in the plates before the 8,000 copies were printed. The Chairman states that no serious errors were discovered, but, of course, it was desirable to correct typographical errors, even as small as the omission of a bracket or an apostrophe. The second edition of 5,000 was ordered bound, July 21. A third edition has been printed and will be bound as soon as the distributing agent can give an idea of the styles of binding desired. Of course, corrections have been made in the plates for each edition as fast as errors were pointed out to the Chairman of the Committee. The different editions are designated by the serial letter on the printed coupon in the front of the book. "A" designates the first edition of 10,000, "B" the second edition of 5,000, "C" the third edition of 5,000. The fourth edition will bear the letter "D." It is estimated on good authority that at least 20,000 copies will be sold before January 1, 1906. The Board of Trustees will use the profit on these volumes in paying the expenses already incurred and, as soon as possible, send the members of the Committee on Revision checks for the honorarium voted by the Board of Trustees at the annual meeting in May and announced in the report of that meeting. Errors in the Pharmacopœia should be reported without delay to Professor Joseph P. Remington, No. 1832 Pine Street, Philadelphia, Pa., so that corrections can be made in the plates before another edition is printed. Criticisms and suggestions for the next revision should also be mailed direct to Professor Remington. Requests for permission to use portions of the text of the Pharmacopœia in commentaries, works of reference, text-books and other similar publications should be made direct to the Chairman of the Board of Trustees, Charles E. Dohme, Baltimore, Md. Neither the Board of Trustees nor the Committee on Revision members have anything to do in their official capacity with the National Formulary. This work is published and revised by the American Pharmaceutical Association, of which Charles Caspari, Jr., Department of Pharmacy, University of Maryland, Baltimore, Md., is the General Secretary. The Convention to arrange for the ninth decennial revision of the Pharmacopœia will be called by the President, Dr. Horatio G. Wood, for May, 1910.

OBITUARY.

Dr. Seth D. Boggs, a well-known physician of the Bedford District, Brooklyn, N. Y., died suddenly last week. He was fifty-three years old and was born in Brooklyn. Dr. Boggs was a graduate of the College of Physicians and Surgeons.

Dr. Clarkson Crosby Schuyler died at Plattsburg, N. Y., last Wednesday, aged fifty-five years. He was born in Troy, and was surgeon of the Troy Hospital for fourteen years. He was one of the best known physicians in Northern New York. He was appointed State Forest Commissioner in 1893 by Governor Flower, serving two years. He was a member of many medical and other associations.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Twenty-sixth Annual Meeting, held at San Francisco, Cal., July 5, 6 and 7, 1905.

(Continued from Page 322.)

A Summary of all the Cases of Fracture of the Spine (244) Which Were Treated at the Boston City Hospital from 1864 to 1905.—Dr. H. L. Burrell, of Boston, contributed a paper on this subject, in which the author presented the following conclusions: (1) "That fractures of the spine may well be divided into two classes; *first,* fractures of the spine with injury to the cord; and, *second,* fractures of the spine without injury to the cord. (2) That it is not best to decide what the treatment of an individual case of fracture of the spine should be from the statistics, because the lesion varies so widely. (3) That in many cases of fracture of the spine it is impossible to state primarily whether the cord is crushed or pressed upon by bone, blood, or exudate, except by an open operation. (4) That only by the persistence of total loss of reflexes, complete insensibility to touch and pain, and motor paralysis below the level of the lesion can total transverse destruction of the cord be diagnosed. (5) That if pressure on the cord is allowed to remain for many hours, irreparable damage to the cord may take place. (6) That unless it is perfectly clear that the cord is irremediably damaged, an open operation to establish the condition of the cord and to relieve pressure is imperative as soon as surgical shock has been recovered from. (7) That in certain cases of fracture of the spine, when the cord is not injured, but is liable to injury from displacement of the fragments of a vertebra, rectification of the deformity and fixation of the spine may be used. (8) That if the cord is crushed, no matter what treatment is adopted, there will of necessity be a high rate of mortality.

Suture of the Spinal Cord Following a Gunshot Injury Involving Complete Severance of the Structure.—Dr. George Ryerson Fowler, of Brooklyn, N. Y., reported the case of A. E., aged eighteen years, clerk, born in America, single. The patient was admitted to the Brooklyn Hospital on April 28, 1903. He gave the following history: He suffered from pneumonia several years ago. Four years ago, while working at a machine, his left hand was caught in the latter, and so badly crushed that it became necessary to amputate four fingers. He had gonorrhea six months ago; no discharge at the present time. Shortly before admission he was shot in the back, his assailant using a 38-caliber revolver, at a distance of about thirty feet; the shooting took place somewhat from the right side. He suffered severely from shock, and paralysis of the lower extremities occurred at once. The bullet wound was located one and a quarter inches to the right of the median line and on a level between the tenth and eleventh dorsal spines. He was found to be paralyzed below the waist; sensation was absent over all of both lower extremities, and over the abdomen as high as one inch above the crests of the ilia on the sides, and about halfway between the symphysis and the umbilicus in front. Bladder and rectum were also paralyzed. The bowels moved involuntarily and irregularly, and without the volition or cognizance of the patient. There was considerable twitching of the muscles of both legs, especially the toes. Operation, May 9, 1903. Ether anesthesia. An incision was made, six inches long, over the spines of the vertebræ, the middle of the incision resting upon the eleventh dorsal spine. The laminæ of the tenth, eleventh and twelfth vertebræ were removed by the chisel. The bullet was found lying transversely between the severed ends of the cords, concealed from view by a large blood clot. A very narrow, ragged, and contused strip of dura, scarcely more than one-sixteenth of an inch in width, remained intact. The blood clot was carefully sponged away and the bullet removed. The ends of the cord were then sutured with three fine chromicized catgut sutures, the dura being included in the sutures. No special difficulty was experienced in drawing together the ends of the cord and closing the defect, the latter representing in width the diameter of the 38-caliber bullet. The dura was further secured with a number of sutures of fine catgut, and a drain consisting of a half dozen narrow strips of oiled silk protective introduced. The skin incision was sutured with silkworm gut. On May 30 the following note appeared on the hospital record: "Wound healed, upper line of anesthetic area from one and a half to three inches lower than before operation. Twitching of toes of both feet and occasional clonic muscular spasms of the flexors and extensors of the thighs; the patient says his 'feet jump on him.' Can feel when the bowels move, but is without control of the rectum. Can feel distention of the bladder with urine, but is without control." The main points of interest in this case related to the possibility of regeneration of the spinal cord following a destructive lesion. Prior to the report of Dr. F. F. Stewart's case, in which Dr. R. H. Harte sutured the cord after it was severed by a bullet, it was the opinion of the majority of investigators that such regeneration in man was impossible. Mikulicz, of Breslau, endeavored to demonstrate the possibility of a successful regenerative process in the lower animals following section of the cord, but without result. Spiller and Frazier found that after division of a posterior root in the dog, followed by immediate suture, regeneration occurred, and that regeneration into the cord did not occur. In Dr. Fowler's case, twenty-six months after the injury, voluntary motion was practically lost in the affected area. The patient was able to stand when supporting himself by the hands resting upon an apparatus, and to make some locomotion by swinging movements in a special frame on wheels. The bladder and rectum control was doubtful, to say the least, the former acting automatically. The patient had the sensation that the bladder and rectum were about to empty themselves, and if the urinal or bedpan were brought to him promptly soiling was prevented. The amount of urine passed in this manner probably averaged more than a pint in the twenty-four hours. The urine was sometimes voided during sleep. Sensation was practically abolished in the entire affected region, with the exception of an area about five inches in length extending down the outer side of the right thigh, where some sensation was present. He was not able to correctly distinguish between heat and cold. Tactile sensations were recognized, but were usually referred to a point two or three inches distant from the point

touched. Marked rigidity and spasticity of both legs rere present. Patellar reflex exaggerated; Achillis reflex marked. Ankle clonus present on one side and absent on the other. The reaction of degeneration was absent. Bed sores developed in the third month; these extended to the muscles and were six months in healing. The skin showed but slight, if any, evidences of trophic disturbance. A final and important comment was suggested in comparing this case with the Stewart-Harte case, namely: The Stewart-Harte case was operated on three hours after the injury, while in Dr. Fowler's case upward of ten days had elapsed before consent to interfere operatively was obtained. The prolonged separation of the divided ends of the cord and the presence of the foreign body had, in all probability, an influence in preventing a complete regeneration of the cord, as occurred in the first case, provided, of course, that regeneration did actually occur. While the case in hand was, therefore, not as striking in many of its features as the Stewart-Harte case, the author thought it presented some points of interest, and for this reason was offered as a contribution to the literature of the subject.

The Surgical Treatment of Intraspinal Tumors.—Dr. Richard H. Harte, of Philadelphia, said that the science of spinal localization was now so well developed that it usually was not difficult to determine with accuracy the location of an intraspinal growth. What was usually understood by the term tumor of the spinal cord was an extramedullary but intraspinal growth like a sarcoma, a fibroma, or a myxoma, giving no evidence of its existence except by the symptoms of medullary pressure which it produced. There had been found records of 92 operations for spinal tumors, among which number 43 patients died, a total mortality of nearly 47 per cent. The nature of the tumor was recorded in 88 of the reported cases. It was sarcomatous in two-fifths of the whole number (37 cases); adhesions, thickenings, etc., hold second place, with 11 cases; then came echinococcus, 8 cases; fibroma, 6 cases; syringomyelia, 5 cases; endothelioma, 4 cases; psammoma, 3 cases; cyst, 3 cases; fibromyxoma, 2 cases; osteoma, 2 cases; and one each of myeloma, lipoma, lymphangioma, dermoid cyst, primary and secondary carcinoma, and one tumor of bone whose nature was not stated. The author reported an interesting case of paraplegia from Pott's disease in which he resorted to laminectomy, with great improvement. With very few exceptions, he said, it was impossible to determine the nature of the tumor before operation. He reported a case of dermoid cyst of the spinal canal on which he operated, followed by recovery, the patient being a girl, seven years of age. Of 82 cases in which the region of the spine affected was given, the upper dorsal region was involved in 33 cases, or over 40 per cent. The tumor was found in the lower dorsal region in 24 cases, in the lumbosacral region in 14, and in the cervical region in 11 cases. the cause of death was given in 28 cases. One-half of these were due to shock and hemorrhage, or to infection and meningitis, there being seven fatal cases under each of these categories. Eight patients died from exhaustion, three from recurrence of malignant growths, two from hypostatic pneumonia, and one from bed sores and sepsis.

As regards the technic of the operation, it was the same as when employed in traumatic cases.

Tuberculous Conditions of the Spine Requiring Surgical and Mechanical Relief.—Dr. De Forest Willard, of Philadelphia, stated that the principal surgical measures employed for the relief of spinal caries were laminectomy for paraplegia; forcible immediate straightening of the kyphosis; forcible gradual straightening; erosion of carious bone; wiring of spinal processes; evacuation of pus accummulations; long continued fixation of the column; and hygienic measures to prevent the necessity for operative interference.

Complete, methodical and long-continued fixation of the spine in the position of hyperextension, with healthful surroundings in the sunlight, were the prime factors in securing new ossific deposit necessary to replace the carious bone. Laminectomy for paraplegia was advisable only after long continued and patient treatment along the above-named lines from one to two years, since the prognosis, especially in children, under these conditions was favorable, and good powers of locomotion might be confidently expected. The operation was justifiable in selected cases where loss of motion and sensation were progressively worse and the symptoms threatened life. If the tuberculous masses within the spine could be removed, and if extradural pachymeningitic deposits or pus could be taken away, improvement might be expected, and in many cases relief occurred. The operation had a mortality of about 25 per cent. from immediate shock; 36 per cent. within a month, while one-half the cases died within the next year, their lives being probably shortened by the operative procedures; cases of non-improvement and death equaled nearly 65 per cent. Forcible immediate straightening of the kyphosis was an unsurgical and dangerous proceeding; it was liable to re-awaken the tuberculous disease and to weaken the column. Forcible gradual straightening by supporting the kyphotic area upon a pedestal was a valuable agent in relieving deformity. The weight of the shoulders and pelvis could thus be utilized as straightening forces, and the weight of the column thrown upon the posterior arches. In this position it was permanently fixed by plaster-of-Paris. Complete erosion of the carious bodies of the vertebræ was an uncertain operation, in the dorsal region requiring section of ribs, with danger of wounding the pleura. Wiring of the spinous processes had never been sufficiently tried to demonstrate its helpfulness. Spinal abscesses which contained only liquefaction of caseation should be aspirated. When true pus formed, thorough aseptic drainage was advisable.

Tumors of the Spinal Cord.—Dr. J. Collins Warren, of Boston, read a paper on this subject in which he reported three cases of tumor of the spinal cord operated on with good results.

Spina Bifida.—Dr. James E. Moore, of Minneapolis, Minn., read a paper on this subject in which he presented an analysis of 385 cases treated by excision. A careful study of these reported cases, illustrating the experience of many surgeons, justified him in drawing the following conclusions: "(1) Operation upon children of very tender age is scarcely worth while because it is accompanied by so large a mortality rate, and because it does not stop the progress of progressing cases. (2) Patients five or more years old can be operated upon safely. (3) Patients with large or rapidly growing tumors, with hydrocephalus and with paralysis or deformities of the extremities are not cured. Finally all we can hope to accomplish by operation for spina bifida is to relieve the patient of an unsightly and annoying tumor after he has survived the dangers of the affliction *per se*."

Exophthalmic Goiter Treated Surgically.—Dr. Thomas W. Huntington, of San Francisco, Cal., said that during the past three years he had treated surgically nine patients suffering from exophthalmic goiter. In each instance partial ablation of one or both lobes of the thyroid was done, and one patient was subjected to three operations successively. Seven were females, and two were males. The ages ranged from twenty-eight to fifty-six years the average age being forty-two years. In five patients the development of symptoms of Graves' disease was associated with pre-existing enlargement of the thyroid. Two of these were cystico-colloid. In four the development of characteristic symptoms was simultaneous with glandular hypertrophy. All of these were colloid. In the five cases where the exophthalmic condition developed secondarily, pre-existing glandular hypertrophy was noted during a period of six, ten, thirty-four, thirty-five and thirteen years respectively. In this series exophthalmic symptoms had been noted one, two, three, two, and two years prior to operation, the average being one and four-fifths years. Duration of symptoms in the primary or pure Basedow cases prior to operation was two years, three months, two months and one year, the average being seven and one-quarter months. In this series eight patients survived the operation and were now living. One patient died on the twelfth day. The eight living patients were carefully watched and their status definitely recorded up-to-date. The author gave a detailed account of each case as it occurred. A wider experience in this particular field had increased his faith in the value of surgical interference in carefully selected cases, and in conclusion he repeated what he wrote in an earlier communication, namely, the argument for early operation in malignant disease applied here with equal force. Extirpation should be undertaken before destructive changes had occurred, before the function of important organs was seriously, perhaps permanently, injured, and the patient's vitality lowered by chronic thyroid intoxication.

A Review of Five Hundred Cases of Gastro-Enterostomy, Including Pyloroplasty, Gastro-Duodenostomy and Gastro-Jejunostomy.—Dr. William J. Mayo, of Rochester, Minn., stated that this included all the cases operated on by Dr. Chas. H. Mayo and the writer during fourteen years in which an incision was made in both intestine and stomach, and plastic union established to increase gastric drainage. The death-rate gave every case dying in the hospital without regard to the cause of death or the length of time after operation. Of pyloroplasty there were twenty-one cases with no deaths, and seven re-operations. Pyloroplasty had only a small field of usefulness. Finney's gastro-duodenostomy, 58 cases, four deaths, two from other causes at a late date; only one death in the first forty-six. The author stated that there was a large field of usefulness for this operation in narrow stricture following healing of ulcers, but it was less useful in unhealed ulcers. Of gastro-jejunostomy there were four hundred and twenty-one cases; benign, 307; death-rate, 6 per cent. Last 140 cases, four deaths. Malignant, 114; death-rate, 18 per cent. In the last 40, including radical operations for cure of cancer, 5 per cent. Murphy button, 157 operations, 139 anterior, and 18 posterior. This was the operation of choice after pylorectomy and partial gastrectomy. McGraw ligature, 36 operations. This was the operation of choice by the anterior method in gastro-jejunostomy for inoperable cancerous pyloric obstruction. Two hundred and twenty-eight posterior suture operations. Robson's bone bobbin, 16 operations, with one death. Mikulicz operation, transverse incision, 43 operations, with four deaths and four secondary operations. Moynihan operation on 9 inch loop, 53 operations, with three deaths; 7 re-operated for chronic bile regurgitation within fifteen months. Roux-Doyen operation, 48 cases, two deaths, two secondary operations. Operation of choice was the Moynihan-Peterson without a loop; made by suture within 3 inches of the origin of the jejunum and obliquely on the posterior wall of the stomach with the inferior margin at the greater curvature near the junction of the pyloric end with the body of the stomach. Last 80 gastro-jejunostomies for benign disease, only one death.

A Simple Aseptic Surgical Technic.—Dr. Dudley P. Allen, of Cleveland, Ohio, related observations which were based upon a series of 377 bacteriological examinations of the hands, made at the close of operation, and upon the clinical results obtained in 3,500 cases. The bacteriological investigations were conducted in five series. In series "A" the cleansing of the hands was with soap and water, scrub brush and nail cleaner. The hands were then sterilized in Harrington's solution. In operating the hands were encased in rubber gloves in which was sterile water. Twenty-six observations were made by taking cultures from the hands at the close of operation. In each case the cultures were negative. In series "B" the washing of the hands was as in series "A." Twenty-four observations showed that cultures were negative in each case. In series "C" the washing was as in series "A" with the addition of thorough subsequent washing in 70 per cent. alcohol. In 42 observations the *Staphylococcus pyogenes albus* was found in eight cases, or in about 20 per cent. The conclusion reached was that alcohol was not efficient as a disinfectant and did not prevent the development of bacteria within the rubber gloves containing no germicide but simply sterile water. From these observations it would seem probable that if bacteria developed upon the hands sterilized by alcohol, when in gloves containing simply sterile water, they would develop in the same manner upon the hands prepared in the same way if encased in dry gloves with powder as the hands became moist with perspiration. In series "D" the hands were prepared as in series "C" and then washed in a solution of bichloride of mercury, 1-5,000, and encased in rubber gloves containing the same solution. Sixty-four observations were made. All were negative except one. In this were found the *Staphylococcus pyogenes albus.*

In series "E" the hands were washed as in series "A" and then thoroughly washed with a solution of bichloride of mercury, 1-5,000, and encased in rubber gloves containing the same solution. One hundred and two observations were made. The Hay bacillus was found in one case.

In series "F" the hands were washed as in series "D" and then cleansed in a solution of bichloride of mercury, 1-3,000, and encased in gloves containing the same solution. Seventy-five observations were made. The *Staphylococcus pyogenes albus* was found in a single case.

The clinical observations were made upon a series of 967 laparotomies. Of these 687 were clean and 288 were septic before operation. There were 2,533 operations other than laparotomies. This gave a

total of 2,139 clean operations. For the purpose of study the clean cases only were taken, since the question of asepsis evidently could not be studied in cases septic before operation.

Tables were presented by the author showing the results obtained in all of the various series of operations as in hernia, varicocele, varicose veins, and laparotomies of all kinds and other miscellaneous operations. The results showed from the whole series of 2,139 clean operations but two deaths from sepsis. Erysipelas developed but once. Stitch abscess occurred in 58 cases, or in about 2.25 per cent.

The method of cleansing the hands finally adopted was to wash them thoroughly with soap and water, using the scrub brush for the palms of the hands, but slightly upon the backs of the hands and never upon the arms, the object being to avoid irritation of the integument. The nail cleaner was used only beneath the nails and not around the bases of the nails. The hands and arms were then washed in a solution of bichloride of mercury, 1-5,000, and encased in rubber gloves containing the same solution. The belief of the writer was that the continued action of the solution of bichloride of mercury in the gloves was a fundamental safeguard in preventing the development of bacteria within the gloves during operation. That this was true in practice was shown by the results obtained in the large number of cultures taken at the close of operation.

The conclusions reached from the various series of cultures and clinical cases were, first, that Harrington's solution, although efficient, was undesirable, since it caused marked irritation of the hands and arms. Second, that washing of the hands and arms should not be too violent, and that the use of the scrub brush should be confined to the hands. The arms should be washed by rubbing with gauze or a towel. The use of the nail cleaner about the base of the nails was unnecessary. Alcohol was not adequate as a germicide when used upon the hands. That a solution of 1-5,000 bichloride of mercury, used after washing to disinfect the hands and arms, and then used in the rubber gloves, was thoroughly satisfactory in protecting against the development of bacteria within the gloves during operation. That the rubber glove was a guarantee of safety, not only to the patient but to the operator himself, when operating upon infected wounds. That a mask over the face was not necessary.

Intussusception.—Dr. Maurice H. Richardson, of Boston, Mass., reported a case of intussusception in a boy aged four years. Vomiting and pain, with intestinal obstruction and a tumor in the left abdomen, suggested very strongly the diagnosis. The operation showed an invagination of the small into the large intestine, so firm that reduction seemed impossible. The child's condition was so bad that an enterostomy was performed, in the hope that a cure would be effected by spontaneous sloughing of the invaginated gut, life meanwhile being maintained through the enterostomy. Unfortunately, the child died at the end of eighteen days; the immediate cause of death being a purulent bronchitis. At the autopsy, no trace of the intussusception could be found. A careful search through the literature showed no case of spontaneous reduction of an intussusception in which the chain of evidence was absolutely complete. In this case, the diagnosis made before operation, and demonstrated before the staff of the Massachusetts General Hospital and a large audience, was unassailable. The lesson taught by this case would seem to be that greater efforts should be made for reduction, either by hydraulic or air pressure through the rectum or by manipulations after the abdomen had been opened. In the reader's experience, however, the results have been fatally compromised by just such efforts. It seemed, therfore, questionable whether in view of the great rarity of spontaneous reduction and of the almost universal failure of the milder palliative measures, one will ever be justified in selecting any but those operative measures which, undertaken at the earliest possible moment, cannot fail to remedy completely and effectively the disease.

Constriction of the Duodenum Below the Entrance of the Common Duct and Its Relation to Disease.—Dr. A. J. Ochsner, of Chicago, read a paper with this title. In a series of cases operated for the relief of cholecystitis it was found that there was frequently present a constricted condition of the duodenum just below the entrance of the common duct. This was usually accomplished with dilatation of the duodenum above this point.

The dissection of a number of cadavers demonstrated the fact that there was present a marked increase in the circular muscular fibers of the duodenum beginning at a point from one to three cm. below the entrance of the common duct and extending for a distance of one to four cm., forming a broad sphincter. It seemed likely that this sphincter had much to do with the physiological function of the duodenum, facilitating the mixing of chyme with bile. It also seemed likely that this sphincter served the purpose of establishing a condition of rest in this portion of the alimentary canal in case of irritation of the biliary or pancreatic ducts. The paper was fully illustrated and the author gave a tabulated list of fourteen cases of dilatation of the duodenum which he had met with among his patients operated for the relief of gall-bladder disease.

Perforation of the Gall-Bladder.—Dr. Archibald MacLaren, of St. Paul, Minn., read a paper on this subject in which he reported ten cases, and said that gall-bladder perforations were comparatively rare, especially if observations were confined to ruptures due to violence, ulceration and gangrenous inflammations. But if we added to these the cases of cholecystitis, in which inflammatory products had evidently escaped from, or passed through, the wall of an inflamed gall-bladder, even though we may not find the perforation itself, the number of cases was considerably increased. Such abscesses about the gall-bladder either in the free peritoneal cavity or in the neighboring liver tissues were rare as compared with appendical abscesses; but were not uncommon and unquestionably should be included when studying perforations of the gall-bladder. Fistulous passages between the gall-bladder and duodenum, stomach or colon were, of course, due to perforation of the gall-bladder. Most perforations of the gall-bladder occurred in neglected cases where gall-stones had been known to exist for long periods of time and where the patient had had ample warning through many attacks of biliary colic. Of Robson's 539 operations on the gall-bladder and bile ducts, 25 of these cases could be fairly said to be perforative in character. Dr. Mayo in 328 cases found 16 perforative cases. Dr. Ochsner in 48 cases operated upon found one perforation. He had operated upon 80 gall-stone cases, 9 of which were perforative in character and one post mortem, making a total of 10, which seemed a large proportion

as compared with other lists of cases already on record. There were eight recoveries and one death. In this fatal case he believed that the result would have been the same even though the gall-bladder had been removed because with gangrene of the gall-bladder and neighboring liver tissue, and especially in the presence of a localized abscess, any operative work which disturbed the abscess wall would only have spread the infection and lessened the chance of recovery. He believed that in any perforation case which had gone on to the formation of a localized abscess, the wisest course was to open and drain the abscess, waiting until a later time to deal with the gall-stones or the disease of the gall-bladder.

Dr. Emmet Rixford, of San Francisco, read a paper in which he discussed the subject of excision of portions of the chest wall for malignant tumors and reported cases upon which he had operated.

Officers.—The following officers were elected for the ensuing year: President, Dr. Albert Vander Veer, of Albany, N. Y.; Vice-Presidents, Dr. James E. Moore, of Minneapolis, and Dr. John C. Munro, of Boston; Secretary, Dr. Dudley P. Allen, of Cleveland, Ohio, re-elected; Treasurer, Dr. Geo. R. Fowler, of Brooklyn, N. Y., re-elected; Recorder, Dr. Richard H. Harte, of Philadelphia, Pa. Cleveland, Ohio, was selected as the place for holding the next annual meeting, the time for which is to be fixed by the Committee on Annual Meeting.

THE AMERICAN MEDICAL ASSOCIATION.

Fifty-sixth Annual Meeting, held at Portland, Oregon, July 11, 12, 13 and 14, 1905.

(Continued from Page 324.)

SECTION ON STOMATOLOGY.

FIRST DAY—JULY 11TH.

Chairman's Address.—After transacting the regular business, the Chairman delivered the annual address. She said the oral cavity bears an important relationship to medicine and surgery. Many pathological conditions of the mouth are due to constitutional causes, and many constitutional disturbances are directly due to neglect of the mouth and teeth and consequent auto-intoxication. Many gastrointestinal diseases and respiratory affections are due to infections of the mouth. Tuberculosis of the tonsils in children, adenoids and mouth breathing are all antecedents of phthisis. Proper care of the oral cavity will lessen stomatitis, gastric and intestinal outbreaks in public institutions. This should emphasize the necessity of a dental staff for all public institutions. The mouth should be very carefully sterilized before operations, otherwise infection and very serious results may follow. Parotitis has been known to follow laparotomies. Deformities of the jaws and teeth are often the cause of indigestion and disturbances of nutrition, due to interference with mastication. Decay of the teeth and pyorrhea may cause deformity by allowing the teeth to change position. The Jewish children have much better teeth as a rule than the Gentile children. The percentage of carious teeth is vastly greater among the Gentiles. The care and development of the teeth in childhood are most important. Nerve end degeneration is often the cause of carious teeth.

Dr. Eugene S. Talbot, of Chicago, said the average dentist does not see anything in relation to his specialty but the mechanical side. Within the last few years he thought certain men in this country had demonstrated that there is hardly a pathological condition of the mouth that is not due to some constitutional cause. Perhaps the most important point in regard to a paper like that is the treatment and care of the mouth during the development of the child. It has been shown that almost all of the deformities and pathological conditions of the mouth can be produced by a want of proper nourishment; that the first period of stress is probably the most important period in the development of the child, and deformities of the jaws, irregularities, etc., are apt to occur when the tissues begin to form. It has also been demonstrated that another cause of defect which has already been stated by the Chairman—*i.e.*, nerve end degeneration—has much to do with the development and disease of the teeth. Another important point, and one upon which great stress should be laid, is that of proper care of the teeth and of the mouth. The fact has been developed that in the specialty of stomatology, as well as other specialties in medicine, auto-intoxication and mouth infection are important causes of disease, and the time has arrived when if the specialty is to take rank with the other specialists of medicine, these three important points must be considered.

Dr. M. I. Schamberg, of Philadelphia, said he was much pleased to hear the Chairman make reference to the pernicious practice of retaining abscess teeth until they had passed beyond the acute stage. Another feature of the Chairman's report was the introduction into the public schools of an examining corps of dentists, who would not only examine, but endeavor to treat and handle many abnormalities presenting themselves early in life. In Philadelphia there has recently been established a corps of medical examiners. He feared, however, it would be some time before dental examiners would be placed in the public schools, but from what he has been able to learn there are very few children in the schools whose teeth are not badly neglected. It shows the necessity for a united effort of physicians and dentists throughout the country.

Dr. Marshall said that if absolute oral cleanliness could be had that it would only be two or three generations before dentists would be a scarce article in the profession. He believed that if the teeth and mouth were kept absolutely clean oral disease would disappear. Diseases of the mouth are usually diseases of neglect. The mistake of not beginning early enough with children is made.

In his army experience he had seen many soldiers coming from the Philippines. The majority of these men are from the lower walks of life and have very little education—certainly no idea of hygiene except what is taught them after they come into service. They know absolutely nothing of the care of the mouth; probably never even owned a tooth brush. It is a part of the duty of the United States to teach these men the use of the tooth brush. Those coming home from the Philippine Islands frequently have salivary deposits all over the teeth, the gums badly inflamed, and many of them suffering from pyorrhea. Some of these men are sent home with dysentery or diarrhea. It has been his fortune to be able to strike a line of treatment with these men which has been exceedingly beneficial. In those suffering from diarrhea, a thorough cleansing of the mouth, putting upon a proper tonic and giving good

mouth washes to keep the mouth clean and tone up the tissues, has produced wonderful results in many cases. Some have been under treatment for four or five months; others eight or ten months, and usually become well finally.

A symposium of dental education was read, consisting of the following papers:

A Common Ground for Medicine and Dentistry.—Frank L. Platt, of San Francisco, read this paper. He said the goal of both professions is practically identical, embracing all honorable means for the relief of suffering and the care and prevention of disease. It is the endeavor of the honest physician to prevent epidemics, and of the dentist to prevent dental disease. Prevention of disease is given a greater and more valuable scientific triumph than its alleviation and cure. More attention should be paid to the study of dental diseases in the medical colleges, and to diseases associated with the teeth in dental colleges. Both professions should unite in instructing the patients as to the value, care and preservation of the teeth. Syphilis, tuberculosis, etc., have much to do with the condition of the teeth.

The Physician as a Dentist.—Calvin W. Knowles, of San Francisco, in his paper said that a dentist should not only be a dentist but a medical graduate as well. Too much attention is paid to the mechanical side of dentistry and too little to the medical aspect. The affections of the teeth are not given sufficient attention in our medical colleges. He was firmly convinced that a chair of Stomatology should be established in our medical colleges. He was also inclined to the belief that a more extensive mechanical course would be very beneficial. It is only by having a more thorough knowledge of the subjects almost exclusively confined to dentistry that the physician will be able to determine in time to conserve the best interests of the patient, where the services of the physician end and those of the dentist begin.

Physician's Duty to the Child from a Dental Standpoint.—Alice M. Steeves, of Boston, in her paper said that the general practitioner has vast opportunity for dental missionary work among the children because of his relationship to the family. He should instruct the mother as to the care of the child's teeth from the appearance of the first white pearl, explaining to her the necessity of giving as much—yes even more—care to these first teeth than should be given to the permanent teeth. These first teeth should receive the attention of the dentist as soon as a cavity appears, and should not be removed until such time as they have fulfilled their mission. Internal medicine is important in this connection because of the relation of the mouth to normal digestion, and because of the effects of various medicines upon the teeth; laryngology is important because of the importance of a healthful condition of all the mucous membranes of the head. The textbooks on diseases of children should give more explicit consideration to the mouth and its relation to disease, and esthetic perfection.

Medical Relations of Certain Conditions of the Mouth.—Dr. L. Duncan Bulkley, of New York City, in his paper said that the mouth is actively concerned in the first step in digestion, and therefore in the processes of life and health. Although subject to continual irritation from various foreign substances, and although the seat of many varieties of microorganisms, its tissues show remarkable powers of healing after surgical or other injuries. The normal alkaline secretion varies with different conditions of the system. The saliva has an important function, but the average person eats too hurriedly and bolts his food too rapidly to give it a chance to act on the food. The saliva has a beneficial effect in sea sickness. If the patient be instructed to thoroughly chew some dry toast or crackers, thoroughly moistening it with the saliva, and eschewing all other food and water, in the majority of instances a recovery will ensue. It is becoming more apparent that decayed teeth are the cause of dyspepsia in many instances, and that purulent discharges in the mouth are often the cause of systemic disturbances. Syphilitic conditions of the system are more frequently evidenced by the condition of the mouth than is generally supposed. In gout and rheumatism there is increased acidity and a consequent gingivitis and pyorrhea. Chancres are found in all parts of the mouth and on the tongue. The most frequent cause of lesions within the mouth is syphilis.

In the discussion Dr. Vida A. Latham said that her experience has been in the last few years that the conditions of the mouth and teeth are based almost entirely upon systemic conditions. One of the great objects of the section work is to bring forth as much as possible specialists who have had large experience in diseases of the body, and try to show a relationship between the system and the teeth and adjoining structures. To her mind syphilis has much more to do with the conditions of the mouth than other extensive infections, possibly excepting tuberculosis. She had seen cases in her own practice where syphilis has been contracted, where the teeth before infection had been in splendid condition and afterward discoloration, decay and erosion have been quite severe, and interstitial gingivitis resulting in pyorrhea alveolaris, with wasting of the alveolar processes. In the last two years she had had two patients with gonorrheal infection of the mouth. The infection was thought to come from the fingers. These cases were unusually peculiar. There was marked inflammation with much pain, —the teeth became loose—there was a greenish slimy condition of the gums, and there was in these two cases slight fever.

Dr. M. I. Schamberg, of Philadelphia, said that all appreciate the number of pathological conditions of a systemic nature that manifest themselves in the mouth. During the past year he had seen one case of lupus, several cases of carcinoma of the mouth, and in one case the main interest lay in the early diagnosis. The dentist referring the case to him sent it because he was rather doubtful as to the condition, and a microscopical examination of the growth, which was very slight at the time, was made, and it proved to be an epithelioma, which was treated by the X-ray with good results. Several cases of syphilis of the mouth in various stages have come under his care during the past year. The last case happened to be an initial lesion immediately posterior to the superior central incisors. The case had gone on with a wrong diagnosis for three weeks, both the physician and the dentist failed to discover the cause of the lesion, and the condition was bad. He found a very pale, macular syphilide upon the abdomen. The mouth lesion had been masked by the application of caustics and other forms of treatment. Such cases show the necessity for thorough insight into medicine generally. It shows also

that the general practitioner is too frequently derelict so far as studies of the mouth are concerned.

Dr. L. M. Rhein, of New York, said that last year in evidencing his interest in the examination of the oral fluids for diagnostic purposes, he had occasion to take exception to the name saliva as applied, as being misleading. There are in the mouth the submaxillary glands, the sublingual glands and the parotid glands. It is true they are the salivary glands of the mouth, and they give forth a large per cent. of the fluid that circulates in the mouth, but there is added to that all of the eliminative secretions of the mucous follicles, which add materially to this fluid. Up to the present, this portion of the fluid has had no recognition given to it as having any of the function that pertains to salivary glands. The main portion of the medical profession have had no education as to what the normal physiological condition of the mouth is, and consequently when they examine an abnormal mouth they are at sea in regard to making a proper diagnosis either of what may be wrong, or as to whether it is even abnormal as distinguished from physiological. The trained stomatologist has opportunities for the minute and careful observation of what he sees in the mouth that so educates his sense of perception between the various conditions that it places him in a peculiarly fortunate position as regards diagnosis. The tendency of the papers presented to us has been more or less to bring us to a realization of the value that a general medical education will give to the man who practices in the region of the mouth. There is no gainsaying also another fact that is apt to be overlooked, and that is the absolute thoroughness of the work.

Dr. Bulkley, in closing the discussion, said that this subject is an immense one, and the fact that others have reached the same point of view on this subject is interesting. Stomatology as a term is of very great advantage, and if that can be introduced everywhere he thought it would be a step in advance. If the section had been called "Dentistry" he would not have read a paper. American dentistry is recognized all over the world. There are many cases of pyorrhea alveolaris which it would unquestionably be folly to send to a physician. In those cases which have been under his care he had used peroxide of hydrogen freely. Undoubtedly in these cases the first item is proper surgical treatment and perfect dental cleanliness. On the other hand, why does a patient have this condition? It is not from the parasites in the mouth. He did not believe in putting down so many diseases as have been attributed to bacteria. Just think a moment what tuberculosis was about fifteen years ago. Who ever thinks of trying to cure it now with tuberculene, etc.? Sunlight and fresh air are the best treatment. Thirty years ago Andrew Clark, one of the greatest physicians in the world, said: "Do not pay so much attention to the lungs; look after the stomach."

SECOND DAY—JULY 12TH.

Dentistry of To-morrow.—Dr. H. P. Carlton, of San Francisco, in this paper said that dentistry is the only specialty of medicine not universally requiring the degree of doctor of medicine. Dentistry and medicine have been separately studied, and this he considered was a great error. The dentist and the physician do not know enough of each other's work. The mechanical aspect of dentistry appealed to those first studying; it has been made a trade rather than a science. The relation of physiology, pathology and bacteriology neeessitates an entirely different attitude, and is rapidly bringing the child dentistry back to the parent medicine. Many diseases are best studied in the mouth. The training of dentists should be under scientific teachers—men who devote their time to the study of medical education, rather than those with a busy practice. The technic of dentistry appears only as a small branch of a work in which all should share. The merely mechanical dentist is not competent to judge problems of diseases of the mouth, which may often be simply an indication of general systemic disturbance. Faulty dental conditions may cause faulty nutrition, etc., which could not be diagnosed by a merely mechanical man. The dental specialist of the future must be a broad diagnostician; must interpret what he sees in the mouth in connection with his general medical education. The same preliminary training should be required whether a student expects to practice general medicine, surgery, dermatology, ophthalmology, dentistry, etc. When this is accomplished, what will become of the dentist? The practical life demands division of labor, and the natural ability of the individual will bring about the proper division. This will not only prepare great men for great things, but little men for greater things than would otherwise have been possible. He who takes up the mechanical side has a broad field. Dentistry requires the highest type of mechanical ability; broad mental training makes a better dentist. "We live not only to be wage-earners, but for our country, our nation and science."

What Will Probably be the Educational Standard for the Coming Decade.—Dr. C. C. Chittendale, of Madison, Wis., in his paper spoke of the advisability of lengthening the college course to four years, and of requiring a degree of doctor of medicine.

These papers were discussed by Drs. Frank L. Platt, of San Francisco; M. L. Rhein, and others.

Surgical Bacteriology of the Mouth.—Dr. A. H. Levings, of Milwaukee, Wis., read this paper. The bacteriology of the mouth, he said, should play an important rôle. Here local manifestations of many diseases are found: influenza, smallpox, syphilis, scarlatina, measles, scurvy, etc., in some of which the specific organism may be found in the oral cavity. The frequency and variety of germs found is of interest. A great variety of germs gain entrance to this cavity, and the natural warmth and moisture, as well as the organic matter frequently present, make it a favorite seat for growth of bacteria. For the purposes of investigation, a variety of types of mouth may be distinguished thus: (1) Clean, (2) ordinary, (3) filthy, (4) tobacco chewer's, (5) mouths with distinct pathological processes.

The first group of bacteria studied comes from clean mouths, with well preserved teeth. To obtain these the mouth is washed with normal salt solution and the washings used for plating. In all cases a hanging drop showed thousands of bacteria; micrococci were found in all. Most frequently one finds staphylococci. In fifteen out of twenty a micrococcus test was made, while in six cases sarcina were discovered. All shapes and sizes of bacilli were discovered. These produced colonies too numerous to mention. Large numbers were acid producers, many gas producers and many species of putrefactive bacteria were found. In filthy mouths there is frequently some pathological process such

as scabies, suppuration, or ulceration. The pneumococcus was present in 10 to 30 cases. Tobacco chewers' mouths are more filthy than ordinary filthy mouths. Tobacco has no influence upon the growth of bacteria.

In ordinary conversation 235 colonies were counted as expectorated. After one minute of conversation at a distance of five feet during forced expiration 105 colonies developed. In one-half a minute at a distance of five feet and forcible expiration 192 colonies. At a distance of 15 feet after five forcible expirations 15 colonies were obtained. On plates exposed at a distance of five feet and coughed at forcibly five times, with one thickness of gauze, 156 colonies developed; with two thicknesses of gauze 35 colonies; with three thicknesses 8 colonies. Scrubbing with water and tooth-brush reduces colonies from thousands to a few. If the mouth is well rinsed and antiseptic then applied, a sterile solution is practically obtained.

Dr. Marshall, in his discussion, said that experience in handling fractures of the jaw shows that about ninety per cent. of all compound fractures of the jaw separate. He had operated upon those cases without any more disinfectant than washing out the mouth; but had learned that if the mouth be not thoroughly cleansed the wound will be troublesome, and salivary deposits will form. In his work in the Presidio, in San Francisco, he had found that the mouths of the soldiers were in a most deplorable condition. He had some placards printed and put in front of the dental chairs: "Clean Teeth Do Not Decay" and others, "Do Not Ask the Dentist to Treat Your Teeth Until You Have Brushed Them." It was surprising how many of those who had been with us some time improved. Many of them had never owned a tooth-brush.

The Treatment of Suppurative Affections of the Face and Neck Emanating From the Mouth.—Dr. M. I. Schamberg, of Philadelphia, Pa., in this paper said that early in the history of medical science men began to follow Nature's method of cleansing. Unaided, the vital forces will untimately throw off pus. For a long time the use of poultices was considered proper treatment. Now the method of prompt evacuation is practised as soon as the presence of pus is determined. There is no place where a scar is more in evidence than on the neck and yet how often does it occur. Unfortunately relief from pain is often obtained by the application of heat in dentalgia. A large proportion of diseases of the neck and throat emanate from the mouth, evidently due to the fact that diseased teeth may be present, and transmit disease to the deeper structures. It is true pus organisms may gain entrance through wounds, ducts of glands, etc., but these are unusual. Suppurative parasites and other deep-seated disease are usually handled intelligently by the general surgeon. Often patients present with swollen faces, necks, and suppurative foci in the superior and inferior maxillary regions, the etiology of which is often obscure. A careful examination of the mouth often reveals the dental origin of the difficulty. A successful treatment of any suppuration is dependent upon recognition of the etiological factor; a putrefying pulp in a tooth may be evidence of its presence. To properly treat suppurations taking place about the face and chest, regard should be given mouth conditions. Sometimes where the lymphatics have been involved, the glands are so badly overworked that they broke down. Suppuration of neck in two cases seen by writer was so extensive as to suggest Ludwig's angina. In fact, in most if not all of Ludwig's anginas the avenues might be sought for in the mouth. Treatment is prevention and proper care of the mouth and teeth. If all mouths were to receive a reasonable amount of intelligent care in the hands of a competent dentist, supplemented by patient's oral cleanliness, many suppurative conditions about the head and neck could be avoided.

Etiology of Teeth Corrugations.—Dr. G. Lennox Curtis, of New York, said that peculiar spots, opaque markings, lateral corrugations, resembling rings, are often found in teeth. They were not always present in all of the members of the same family. Sometimes they are lateral, sometimes longitudinal. One cannot always find these markings on teeth and nails of same individual at same time. He believes that their presence points to an abnormal and interrupted changes in nutrition when the enamel is soft and impressionable. He concluded that the principal causes of corrugations upon the teeth are intoxication from absorption of ptomains, etc., from intestinal fermentation. These interfere with normal functional activity, clog emunctories, pollute the blood stream and produce substances called rheumatic fibrin. Fibrin may also be due to prodromal stage of disease. Some claim that leucocytes produce fibrin. He elaborated his opinions at great length and illustrated with many unique observations.

Dr. M. H. Fletcher, of Cincinnati, said in discussion that the markings on the nails are an established guide to physicians and he had always understood they were looked upon as being especially indicative of disorders of the alimentary tract; however, it is a known fact that any acute wasting disease which so reduces the assimilative processes of the body that destructive metabolism is present for a period of one or more days, will show transverse corrugations in the nails, the number, size and depth of these being determined by the severity and length of time that destructive metabolism is present. Pneumonia, pleurisy, or an acute attack of any kind will show these markings as surely as derangement of the alimentary tract.

Third Day—July 13th.

To What Extent are Teeth Necessary to the Human Being?—Dr. M. H. Fletcher, of Cincinnati, in his paper said that nature offers considerable variations from an average standard, and still preserve a good state of health. The physiology of perfect function is so rare that it is hypothetical. It is the physician's endeavor to restore a patient to an average state. In patients in whom all the teeth are lost, great benefit may be derived from artificial ones, yet if they are not good, many of them are injurious to the mouth. Some artificial teeth are only valuable for cosmetic reasons, and appearances are not to be ignored. The insertion of a poor crown to replace lost teeth, however, brings trouble. Good molars properly opposed do more good work than substitutes. Grinding can be replaced in present stages of civilization by chemicals and by cooking. The actual necessity for teeth in the civilized race, he said, is almost nil. His superior intelligence allows him to choose his food. The saliva is merely a moistening fluid, and it is soon replaced by the gastric and the pancreatic juice. In examining men for military service, he

must have four sound double teeth on each side, or he is rejected. The loss of two-thirds or eight back teeth will not debar entrance and the back teeth include bicuspids. If the front teeth remain and double teeth are gone, rejection is demanded. Artificial teeth are not considered a substitute for natural ones in the army. Not much choice in army rations, which no doubt is taken into consideration by the examiner. The demands of health are more properly met by choice and selection of foods and proper preparation. There is danger to the patient from unkept artificial teeth and badly fitting plates.

In the discussion Dr. Talbot said that the first point in the paper is that man can get along without his teeth. The dentist believes that it is possible for a man to live without teeth; the second point is that modern dentistry, due to uncleanliness in the insertion of bridges, has as much to do with disease as any one thing. The collection of germs about ill-fitting crowns is more detrimental to the mouth than no teeth. In the lower vertebrates teeth are necessary, not only for chewing, masticating, but for prehensile purposes. As man rises in evolution the jaws and teeth are of less importance until at the present time it is questionable whether teeth are necessary. He has believed for years that man could get along without teeth. There are plenty of cases on record where men have lived for ninety or one hundred years where they have been without teeth for fifty or sixty years. Methods of preparing foods nowadays do not require mastication, and the jaws are shortening.

Dr. Platt, of San Francisco, said that while it is possible that man may live without teeth, he did not think it is a good plan for him to do so. He is heartily opposed to eating prepared food that is easily digested, and said he was opposed to vegetable diet and health foods. He had had patients who have taken up this mode of living and they are all losing their teeth. All show evidence of malnutrition.

Fatal Oral Pathological Conditions.—Dr. G. V. I. Brown, of Milwaukee, Wis., in his paper said: First, early recognition is essential to the prevention of grave results from comparatively simple, incipient conditions; second, extremely carefully differential study is necessary to distinguish between comparatively unharmful and other pathologic states that may be almost or quite hopeless from the point of view of prognosis; third, by the time the more serious cases come to the attention of the surgeon or general practitioner of medicine, it is frequently too late for successful treatment, and having developed one form or another of serious disease, the simplicity of its origin is too commonly never recognized; fourth, one of the reasons this is so is because dentists who have constant supervision of the mouths of their patients do not recognize the serious nature of the affection promptly enough; and, on the other hand, want of familiarity with the detail of diagnostic symptoms of mouth diseases on the part of the general practitioner prevents him from making a diagnosis that would be of untold value. Interstitial gingivitis, or so-called pyorrhea alveolaris, the various forms of stomatitis, neuralgic pain, malprosed teeth, inflammatory and suppurative processes, including necrosis of the maxillary bone, and contracted dental arches are every day matters in the daily routine of the average dental practice. Malignant growths, tic douloureaux, mascular tic, facial paralysis, neurasthenia and other neurotic manifestations are constantly numbered among the hopeless cases of practitioners of medicine. That there is a chasm, but poorly bridged between these two, the better covering of which would save many lives and incalculable suffering, can hardly be questioned.

"The Ossification of the Lower Jaw," by Edward Fawcett, of Bristol, Eng.; "Anchylostomiasis and Tongue Pigment," by T. M. Russell Leonard, of Grenada, British West Indies, and "The Roentgen Rays in Dentistry," by M. Kassabian, of Philadelphia, were read by title.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirtieth Annual Meeting, held at Niagara Falls, May 25, 26 and 27, 1905.

The President, Emilius C. Dudley, M.D., of Chicago, in the Chair.

The Society held its sessions at the Cataract House.

An address of welcome was delivered by Dr. Carl G. Leo-Wolf, of Niagara Falls, which was appropriately responded to by Dr. Ely Van de Warker, of Syracuse.

Accidental Rupture of the Non-Parturient Uterus, with Report of Cases.—Dr. George W. Jarman, of New York, had seen five cases of accidental rupture of the non-parturient uterus. These were detailed. To draw some deductions from his own cases and those reported by others, it seemed to the author (1) that the operation of invading the cavity of the uterus should not be regarded lightly, and that the same care in the details of asepsis should be carried out as in a laparotomy. (2) That great care should be used in the introduction of steel dilators, and at no time forcing them into the cavity of the uterus. (3) That as one's experience in gynecology increased, the use of the uterine sound decreased, and the fingers more and more frequently took the place of the curette to remove secundines from the uterus. (4) That sterile water was the best fluid for irrigating the uterine cavity. (5) That if a rupture or perforation of the uterine wall occurred, it was better to perform a laparotomy and assure one's self of the safety of the patient than to hope that no untoward results would ensue. (6) That if one could not be certain of the asepsis of the curettage, it was better to use a small drain through the vagina, and a slightly elevated posture of the patient, than to regret its non-use after the development of septic peritonitis. (7) That in properly conducted cases observed soon after the accident there should be almost no mortality.

Dr. A. Palmer Dudley, of New York, had perforated the uterus four times. In one case, after introducing the instrument into the uterus, he withdrew what he supposed was a fungous growth or secundines, but which proved to be eight inches of the small intestine. The intestine was passed back through the opening made in the uterus, and the patient let alone. She had since borne two children.

Dr. Herman J. Boldt, of New York, said it was not always that a perforation of the uterus caused serious trouble. Great discrimination should be used in those cases in which there was danger. In all instances of criminal abortion, where there was any suspicion that infection had taken place, the abdomen should invariably be opened. He had perforated the uterus a number of times, and had seen it perforated by others. In other instances of perforation of the uterus, the physician should do nothing except perhaps insert a small piece of gauze through the cervix, let the patient alone, and he believed the majority of cases would recover.

Dr. Eugene Boise, of Grand Rapids, Mich., reported two cases of perforation of the uterus, one of which occurred in 1871. The physician in attendance passed a sound clear up to the handle. Nothing was done, and the patient developed no symptoms. In the other case the uterus was perforated with a curette; the cavity was thoroughly washed out, the patient put to bed, without anything further being done, and she made an uninterrupted recovery.

Dr. Fernand Henrotin, of Chicago, had seen five cases in which the uterus was perforated. One was accidental. One was the result of the work of an abortionist, and on opening the abdomen, the patient being septic nine days after the supposed operation, he found a bougie nine inches long in the abdominal cavity. The patient recovered after undergoing a severe trial.

Dr. Andrew F. Currier, of New York, agreed with the previous speakers that in many of the cases in which perforation of the uterus had occurred no damage would result if the intestine had not been withdrawn. If there was a mere puncture of the uterus, if the woman was not septic, it was safe to leave her alone and do just as little manipulation as possible. But supposing the uterus was in a soft, friable condition, one was presented with the alternative of either closing the perforation or of removing the uterus. In many cases the removal of the uterus was preferable, and more than likely would result in more benefit to the patient than the mere closure of the hole. The key to successful treatment was complete drainage, and if there was already a condition of sepsis in the uterus, and one simply closed the wound, he was by no means sure that the sepsis would not continue. Therefore, in cases of that kind it would be prudent to remove the uterus, leaving the wound in the vagina open, and establishing free drainage.

Dr. A. Lapthorn Smith, of Montreal, did not think it was the curette which was responsible in most cases for perforation of the uterus. He confessed to having perforated the uterus about six or eight times. He had no fear of the result if the parts were thoroughly aseptic.

Dr. Clement Cleveland, of New York, had perforated the uterus with a sharp curette on one occasion when he was talking to his class about the carefulness with which the instrument should be used. The patient was to be operated upon for a lacerated cervix and lacerated perineum. He postponed this operation, put the patient to bed, and no bad results followed. The Society should exercise its influence toward eliminating the sharp curette from the bag of the general practioner, or else it should be relegated to the junk heap. It was fraught with the greatest harm to future women if it was used in the careless way it was to-day.

Dr. William E. Moseley, of Baltimore, said both the dull and sharp curettes had their place. Personally, he first introduced the dull instrument for diagnostic purposes, and then the question as to whether the dull or sharp curette should be used depended upon the character of the tissues one had to deal with. There were some cases in which there was more danger of perforation of the uterus from the use of the dull than from the sharp curette.

Dr. William H. Wathen, of Louisville, did not think the dull curette had any place in the surgery of an experienced gynecologist. The man who could not use a sharp curette without injuring his patient had better refer his cases to someone who could. Occasionally, he admitted, cases were reported where the uterus had been perforated by experienced operators. Curettage should be done by the sharp curette, or decidual remains should be removed by the finger, if possible.

Dr. Ely Van de Warker, of Syracuse, N. Y., stated that uterine curettement was attended with more or less danger, and should be confined to the hands of good gynecologists, and rarely ever or never done by the general practitioner.

Dr. Seth C. Gordon, of Portland, Me., said occasionally he had pushed a sound through the uterus, but by leaving the patient alone he had not seen any harm result.

Dr. Philander A. Harris, of Paterson, N. J., had perforated the uterus twice, once through the corpus posteriorly and once anteriorly. The perforation posteriorly was done by the curette, and the one anteriorly by his dilator. With his present dilator there was a device attached to it which registered the exact number of pounds exerted by the operator in dilating the cervix.

Dr. T. A. Reamy, of Cincinnati, Ohio, had perforated the uterus with a sharp curette within the past two years. He curetted a woman a short time ago, whose condition was such that his consultant was in doubt as to whether there was cancer of the body or the result of a chronic endometritis. The speaker in curetting the uterus rather thoroughly perforated it. A pelvic abscess resulted from the perforation, which was opened, and the patient made a good recovery.

Dr. Emilius C. Dudley, of Chicago, stated that within five weeks he perforated a uterus with a curette. The uterine wall was not more than the thirty-second of an inch thick, due to a localized pathological condition. A considerable quantity of bloody fluid was found in the cul-de-sac of Douglas, which was sponged out, the abdominal cavity flushed out with salt solution, and after closing the wound in the uterus with a purse-string suture, the abdominal wound was closed, and the patient made a good recovery.

The Treatment of Retroversion of the Uterus by Shortening the Uterosacral Ligaments.—Dr. Arthur W. Johnstone, of Cincinnati, stated that the first step in either retroversion or prolapse was due to a stretching of the uterosacral ligaments. This was proven by clinical experiences and a study of the comparative anatomy of the subject. This stretching was most commonly due to a low grade of infection spreading to these ligaments from the uterus or other contiguous structures, that made them lose their tone. A few cases were due to direct violence. The operation consisted in shortening the uterosacral ligaments through the vaginal incision. The uterus was replaced and prolapse cured. Shock was *nil*, and convalescence smooth.

A New Plan of Procedure in Retro-Uterine Displacements.—Dr. E. E. Montgomery, of Philadelphia, stated that retrodisplacements of the uterus more frequently demanded restoration to normal position than any other form of displacement. Nature's forces should be imitated as far as posible in relieving malpositions. The Alexander operation and its modifications were in this line of procedure. Its usefulness was limited to the uncomplicated and mobile uteri in which operative interference was least demanded. The majority of the intra-abdominal operations on the round ligament employed the best part of the ligament in their manipulation and left unaffected its weakest portion. The various operations of ventrofixation and ventrosuspension were departures from the normal, placed the uterus in abnormal relations and rendered painful and difficult the performance of its normal functions. The vaginal procedure required considerable dissection, were ineffective in restoring normal relations, and were to that degree to be condemned. The operative procedure, he would suggest, was a combination of operative procedures employed by Gilliam, Ferguson and Simpson. It permitted of treatment of diseased ovaries and tubes, left the uterus a freely movable organ, supported it by normal elastic

and muscular structure capable of undergoing evolution and involution, and, finally, afforded no opportunity for the formation of unfortunate adhesions.

Arteriosclerosis of the Uterus as a Factor in Uterine Hemorrhage.—Dr. Palmer Findley, of Chicago, read a paper on this subject, in which he gave a résumé of all cases, and reported four new ones. The writer dealt exclusively with the so-called essential or idiopathic hemorrhages, the cause of which was not definitely determined. He argued that arteriosclerosis of the uterus was not the prime factor in bringing about these obscure hemorrhages. In his opinion muscular insufficiency was the underlying cause, and the sclerosed vessels were but contributing factors. He drew the following conclusions: "(1) Metritis, as a primary lesion and independent of infection, is not accorded the consideration which the frequency of its occurrence and its clinical significance would warrant. (2) The muscular fibers of the uterine wall have an important function in controlling the caliber of the blood vessels, and hence in regulating the blood supply to the uterus, as evidenced in the relaxed condition of the uterine wall during menstruation, in post-abortion, and post-partum hemorrhages, and in the free bleeding which accompanies curettage when the uterus has relaxed under the irritable influence of the curette. In all these conditions the hemorrhages are controlled by the contractions of the uterus. (3) Any event which lowers the muscular tone of the uterus may occasion an abnormal loss of blood into the endometrium and uterine cavity. (4) Prominent among the factors which contribute to muscular atony in the uterus are the wasting diseases, anemias, and acute febrile diseases, which are not infrequently accompanied and followed by uterine hemorrhages as the result of weakened support to the vesical walls. (5) Fibrosis uteri is a far more common cause of muscular insufficiency. The building up of connective tissue in the uterine wall at the expense of the muscular elements is the result of long-continued passive congestion, which in turn is due to numerous general and local lesions, such as an incompetent heart, obstructions in the lungs, liver, kidney and spleen, abdominal swellings, varicose veins of the pelvis, and uterine displacements. (6) The walls of the blood vessels share in these hyperplastic changes, in that the media and adventitious coats of the vessel are thickened. In this manner the elasticity of the vessel walls is impaired, and if the lumen of the vessels is not narrowed by contraction of the vessel walls, and thickening of the intima, there will be added reasons for various engorgements of the uterine wall and capillary oozing at the endometrium. In such cases the prime factor in the causation of uterine hemorrhages is the muscular incompetency; the thickened vessel walls and the remote embarrassments to the circulation are but contributory factors. (7) This condition of the vessel walls is to be distinguished from the arterio-obliterans of the normal senile uterus, in which the vessels are partially or wholly obliterated by the thickened intima. In such cases hemorrhages do not occur, for the season that the blood supply is greatly diminished. (8) In none of the recorded cases were hemorrhages seen to come from ruptured blood vessels, nor were aneurysms of the arteries seen in the uterine wall. On the contrary, the escaped blood was farthest removed from the sclerosed vessels, and more evidently capillary. We are therefore not justified in ascribing the hemorrhages directly to the sclerosed vessels. (9) The diagnosis can only be made by first excluding all other possible causes, such as polyps, carcinoma and fibroids. (10) Hysterectomy has been frequently resorted to after repeated curettements have failed. Palliative methods—rest, ergot, styptic applications to the bleeding surface, and finally tamponading the uterine cavity—may be resorted to, but have repeatedly failed."

Postoperative Vomiting.—Dr. Eugene Boise, of Grand Rapids, Mich., said it was assumed as proved that there was a vomiting center from which all impulses toward vomiting were sent. These impulses might be received through various channels. The conditions that led to postoperative vomiting were numerous. They might be grouped as (1) those conditions pertaining to the anesthetic; (2) those pertaining to the general condition and surroundings of the patient; and (3) those pertaining to the stomach. The anesthetic caused vomiting (1) by its direct irritant action on the vomiting center; (2) by causing a toxemia, and (3) by saturating the secretions of the stomach. The conditions pertaining to the stomach were (1) chronic, such as atony, dilation, chronic disease of the mucous membrane, etc. (2) Acute, as saturation of the tissues and secretions of the stomach by the anesthetic. Treatment must therefore be preventive as well as curative, involving greater care in the preparation of the patient. Four things must be kept in mind: (1) The abnormal irritability of the vomiting center; (2) the condition of the stomach; (3) the condition of the blood; and (4) the condition of elimination. Treatment must be adapted to the conditions found. Theoretically, the indications were to obtund the sensitiveness of the vomiting center; to neutralize, if possible, the irritant character of the anesthetic, to cleanse and soothe the stomach; to keep the patient quiet in order to avoid circulatory disturbances; to aid elimination, and to support the patient and nourish the irritated nerve centers by rectal feeding when indicated.

Dr. A. Lapthorn Smith emphasized the necessity and importance of preliminary preparation of patients. Careful attention should be given to diet, to getting the bowels thoroughly cleaned out, so as to reduce the amount of vomiting after operation to a minimum. He advocated the drinking of large quantities of hot water by patients to wash out the ether that had been swallowed during its administration. Hot water taken in this way amounted to the same thing as gastric lavage.

Dr. Matthew D. Mann did not believe the character of the anesthetic had as much to do with vomiting as the amount of the anesthetic. The more deeply a patient was anesthetized, the greater the amount of anesthetic used, and the longer time it took the patient to get rid of it, the more the vomiting center was irritated. For three years he had been using ether, preceding it by chloride of ethyl. He had done an operation, lasting forty-five minutes, with two or three ounces of ether, when preceded by chloride of ethyl. Since following this method, vomiting had been greatly reduced, and in many instances the patients had not vomited at all.

Dr. A. Palmer Dudley said that if operators considered the preparatory measures mentioned by Dr. Mann, there would be less reflex action on the part of the stomach in postoperative work.

Dr. Andrew F. Currier thought the preliminary administration of chloride of ethyl, or nitrous oxide, as had been his custom recently, was much more satisfactory than the prolonged and irritating effects which came from the first stage of anesthesia through the administration of ether alone. One could lay down as a principle that given a very careful administration of the anesthetic and a small quantity, one would have much less trouble afterwards from vomiting.

Dr. C. C. Frederick agreed with Dr. Mann as to the preliminary use of chloride of ethyl, followed by ether or chloroform. For a year and a half or more he had begun anesthesia with chloride of ethyl, getting the

patient under its influence rapidly, then changing to ether or chloroform. Vomiting was much less by this combination.

Dr. Arthur W. Johnstone attributed the great decrease in the amount of vomiting after operations largely to careful preliminary preparation of his patients.

Dr. Daniel H. Craig, of Boston, did not consider eserin in any sense a specific against postoperative vomiting, but he thought it had the same effect on cases of postoperative vomiting as gastric lavage, whether resorted to before the patient left the table, or later. The effect of small doses of calomel given before operation, or divided doses of it after operation, was the stimulation of normal peristaltic action. With lavage the stomach was emptied. Eserin had no effect on the motility of the stomach itself, but it did in reestablishing or preventing stoppage of intestinal peristalsis. Eserin did the work far more efficiently than divided doses of calomel, which necessitated giving the patient medicine by the mouth at a time when she was nauseated and unprepared to take it.

Dr. Malcolm McLean, of New York, said one should give as little of the anesthetic as possible. Anesthetics should be given by men who were skilled in this work. By giving a preliminary anesthetic, such as chloride of ethyl or nitrous oxide, the preparation was such that when ether or chloroform was given, large toxic doses of it were not carried through the circulation so as to poison the patient in the postoperative stage.

Dr. George Gellhorn, of St. Louis, stated that for about a year he had employed as a preliminary the hypodermic injection of scopolamine-morphine, about an hour before operation. This combination arrested secretions from the mucous membrane of the mouth and throat. He gave scopolamine and morphine in the proportions of $^1/_{100}$ of a grain to $^1/_6$ of a grain of morphine. The effect was that the mouth and throat were absolutely dry and remained so during the operation, and the amount of ether used was materially minimized.

Dr. Reuben Peterson said his experience had been different from that of Dr. Gellhorn in the use of morpine and atropine. He had used this combination for years, giving about one-sixth of a grain of morphine and $^1/_{100}$ of a grain of atropine, about three-quarters of an hour before the anesthetic was given. Before he used these drugs there used to be excessive secretion; there was gurgling, so that the mouth and throat had to be swabbed out; but since their use this had almost entirely ceased. He had not attributed the absence of vomiting to the use of these drugs entirely, but to thorough preliminary preparation of the patient, and to better methods of administering chloroform and ether.

Dr. Edward P. Davis said that the remarks made concerned patients with whom there had been abundant time for preparation. One was obliged sometimes to operate upon emergency cases, as ruptured ectopic gestation. In these postoperative vomiting might be very depressing and dangerous. What could be done to prevent it? While the patient was on the table, and before the operation was quite completed, intravenous saline transfusion or injection would prevent postoperative vomiting as well as prevent shock.

Dr. Fernand Henrotin said that one of the most important factors in the reduction of vomiting, as well as in the reduction of shock and of making a patient's recovery reasonably smooth, was washing out the stomach. For a little over a year he had been resorting to quick anesthsia with nitrous oxide preparatory to the administration of ether, using as little of the anesthetic as possible, immediately washing out the stomach thoroughly after every operation, and giving a hypodermic injection of eserin before the patient was taken off the table. The use of this combination had made an immense difference in the results of his general operative work.

Dr. J. Wesley Bovee thought the proper procedure was to prepare patients as well as the conditions would permit, and do it with proper discrimination. Then came the proper administration of the anesthetic, giving as little as possible of it, and steadily, not irregularly. After the administration of the anesthetic he had found the administration of oxygen for fifteen to twenty minutes to be the most satisfactory of anything he had used. He objected to the use of morphia because there were so many cases of renal complication in which the use of this drug would handicap the operator.

SYMPOSIUM ON THE RELATION OF THE APPENDIX TO PELVIC DISEASE OR TO PREGNANCY.

The Relation of the Appendix to Pelvic Disease.—Dr. Reuben Peterson, of Ann Arbor, Mich., read a paper on this subject in which he presented the following conclusions based upon the clinical and microscopical study of 85 appendices removed during the course of operations for pelvic disease; "1. In the first series of 200 cases, reported last year by him, a little over 50 per cent. of the appendices were found microscopically to be normal. In the present series 49.3 per cent., or practically 50 per cent., were found normal. The same microscopical classification was adopted as last year, namely, (1) negative; (2) chronic inflammation; (3) doubtful significance; (4) former inflammation; (5) acute inflammation; and (6) periappendicular inflammation. The only change in the classification was that groups 1 and 3 were practically united, and with the exception of two cases were placed in the negative group. This was a minor detail of classification, however, as in each series the appendices in both groups were considered normal. 2. In both series practically one-half of the removed appendices were microscopically normal, while the remainder showed evidences of acute or chronic inflammation, or the results of former inflammation. 3. The average length of 79 appendices was 9.99 centimeters. In the first series the average length was 8.25 centimeters. 4. The appendix was found adherent in 20 out of the 85 cases, or in 23.4 per cent. This was 5 per cent. higher than in the last year's series. But both series show that the appendix was adherent twice as frequently in those cases where microscopic examination showed past or present disease. A certain proportion of adherent appendices were, however, perfectly normal microscopically. 5. Abnormalities in shape were noted in 27 out of the 85 cases. The appendices were found to be club-shaped, constricted, or bent upon themselves in 10 of the 27 cases, yet microscopically such appendices were normal. Hence the same conclusions arrived at last year held good for the present series. Mere shape of the appendix cannot serve as an index of its normality or disease. Appendicitis may be club-shaped, constricted, or bent upon themselves, and yet be perfectly normal. 6. There were fecal concretions noted in 14 out of the 85 cases. This gave a percentage of 16.4, and was double that noted last year. This might be explained by the more accurate observations made in the present series of cases. It did not take into consideration microscopic concretions, but only the palpable forms. In 7, or one-half the cases, the appendices with fecal concretions were normal, hence, as noted in the first series, their existence did not denote disease. 7. Exactly 50 per cent. of the 34 patients in the present series with chronic disease of the appendages showed accompanying disease

of the appendix. 8. The following conclusion would hold good for both series: In chronic disease of the appendages adhesions of the accompanying appendices are present in nearly 50 per cent. (47 per cent., second series) of the cases where microscopical examination shows the latter to be diseased. In a certain proportion of cases, however, although the appendix may be adherent, it is also perfectly normal. 9. Of the 17 normal appendices accompanying chronic diseases of the appendages, 9 were noted as changed in shape, or contained fecal concretions, hence in chronic disease of the appendages, the appendix, which is club-shaped, constricted, or contains fecal concretions, is not necessarily diseased. 10. There were 21 cases of uterine fibromata among the 85 patients. Of these, 48 per cent. had accompanying disease or evidence of former disease of the appendix. The percentage was in the first series practically the same. 11. There were eight cases of large ovarian cystomata in the second series. Of these, 50 per cent. had accompanying disease of the appendix."

Inflammatory Conditions of the Appendix Accidentally Brought to Light in Pelvic Operations.—Dr. Hunter Robb, of Cleveland, Ohio, stated, in a paper on this subject, that of 370 appendices removed and examined microscopically, 103 were normal; 46 showed signs of a chronic, and one of an acute, appendicitis. In 88 cases there was an hypertrophy of the subperitoneal or internal coat, or of both coats. In 66 cases the changes were of doubtful significance; in 36 the lumen was occluded; in 16 dilated; in 12 the appendix contained concretions; in one case the appendix was cystic and had undergone myxomatous degeneration; in one case no lymphoid tissue was present. Conclusions: "(1) In a large number (in his series, 323 out of 370) of pelvic cases no inflammatory changes in the appendix were found even microscopically. (2) When one finds a normal appendix in conjunction with disease of the pelvic organs, it is improbable that the latter condition has been brought about by a perforation of the appendix which had afterward healed. (3) On the other hand, an old periappendicitis and adhesions might often be looked upon as the result of a septic infection, originating in and spreading from the organs of generation. (4) An appendix which looks abnormal microscopically does not always show inflammatory changes on microscopical examination. (5) Nevertheless, when the removal of the appendix adds very little to the gravity of the abdominal operation, for the benefit of the patient it should be taken away. (6) In his series of 370 cases there were four deaths; but a careful analysis shows that the fatalities should in no instance be attributed to the appendix removal."

Appendicitis in Its Relation to Pregnancy.—Dr. Henry C. Coe, of New York, stated that his experience had led him to believe that many mild cases were overlooked, or were mistaken for other affections—adnexal disease, pyelitis, colitis, etc. In view of the tendency to obstinate constipation and intestinal toxemia, one would expect to find that appendiceal complications were not infrequent during pregnancy. Moreover, many women with a history of former attacks became pregnant, when all the conditions favored recurrences, though they were usually of a mild type. Eight illustrative cases were cited from the writer's private practice, four patients recovering without operation, two being operated upon at the third and fifth months, without interruption of the pregnancy, while the remaining two were carried through the puerperium and submitted to operation later. Dr. Coe then discussed the symptoms, diagnosis, differential diagnosis, prognosis and treatment. The writer's views coincided practically with those of Pinard, namely, to treat appendicitis in the pregnant female according to the same rules as in the non-pregnant. In mild cases carry the patient to term, if possible, and operate as soon as convenient after the puerperium, if the trouble persisted. With the persistence of local pain, and if an induration was felt, operate as in any other case. Perforation and abscess formation called for immediate operation, rapid work, as little handling of the uterus as possible, and free drainage. Accouchement forcé, previous to operation, as recommended by Marx, was not approved by the writer. Since the toxemia of pregnancy was often of intestinal origin, as in appendicitis, careful attention should be paid to the regulation of the bowels by the use of laxatives, high enemata, restricted diet, the drinking of large quantities of water, etc.

(To be Continued.)

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Regular Meeting, held March 20, 1905.

The Scope and Problems of Surgical Physiology.—This paper was read by Dr. Crile, of Cleveland, Ohio. Surgery in its early days had been, he said, anatomical and empirical; but it had been wholly transformed by the origin and development of pathology and bacteriology. Physiology in its surgical relations was now, however, coming to the fore as it was more and more realized how often surgical treatment rested on an understanding of surgical physiology. A stoppage of respiration for instance due to reflex inhibition was a very different phenomenon from a similar stoppage due to obstruction, and demanded therefore a different sort of surgical interference. Respiratory arrest could be caused by strong traction on the tongue and a knowledge of this physiological fact might relieve anesthetizers of embarrassment who, in their efforts to produce respiration, might, in their ignorance of physiology, be defeating their own purpose. The reflex effects of peritoneal manipulations were often overlooked and the reflex expulsion of intestines, through an abdominal wound, was often blamed on the anesthetist when it was due really to peritoneal irritation. The surgical physiology of the circulation was of the utmost importance and yet it was very incompletely understood. Often life itself and more often still immediate operative results depended on the proper care of the circulation. Independent of anesthesia the mere handling of tissues might impact or even throw out of function completely the vaso-motor centers; and a proper knowledge of the facts would make efforts to afford these centers efficient support more intelligent. The result of an operation is equal to the sum of the insults caused the tissues; and blocking of certain of these insults, by intraneural cocainization has minimized or even abolished shock after even such serious procedures as double thigh amputations. The mere opening of an appendical abscess under cocaine with an extensive curative operation later when the procedure could be carried on within physiological limits was a good example of the safety of operative physiologic progression. Many of the facts of compensation by one organ for another were quite unknown and yet a knowledge of them would be most important for surgical treatment. The nature of protoplasmic response to changed environment, determination of minimum circulatory requirements for each organ, discovery of practical methods for helping organs over a surgical crisis, the whole question of physiology of the lymphatics, of the surgery of thrombosis and embolism, of shock—here were problems almost untouched. The intricate problems of brain localization in human beings

were still to be developed. And might it not be possible by cocainization to effect functional detachment of the medulla to protect it from injurious surgical stimuli? There had been hitherto a surgical fear of the heart; yet perhaps in the future operations on the valves might not be impossible. Our knowledge of the pulmonary circulation was infantile; surgery of the stomach had but just been opened and the suprarenals, thyroid and pituitary body had been almost untouched.

Dr. Howell said that thirty years ago, when Ludwig and Virchow were doing their work, the association between medicine and physiology had been intimate. With the prominence of pathology and bacteriology, however, the two had been somewhat divorced; but it was gratifying to see surgeons again coming back to physiology. The problems in surgical physiology were, however, very difficult ones and were not to be thought of as simple; for they depended, ultimately, on physiological fundamentals and these were difficult for even specially trained physiologists to master.

Partial Occlusion of the Aorta.—Dr. Halsted reported some experimental work done by himself and Dr. Sowers on this subject. Ligation of the aorta had been tried fourteen times in human beings and had always been fatal. The early experimental work on the subject had been done by Pirogoff, but, on account of his septic technic, it had not been successful. Dr. Halsted used for ligation a metal band which could be gradually tightened until obliteration was complete. Contrary to what might be expected, no gangrene of the lower extremities occurred; but Stensen's phenomenon (paralysis of the extremities due to anemia of the cord) was present. As a rule in time the circulation became completely shut off; but just before this occurred an equilibrium was apparently established between the blood above and that below the ligature and there were evidences that in some cases the pulse reappeared below after having disappeared. No evidence of clot formation was seen nor was there any endothelial proliferation in the arterial wall—which was normal except for atrophy. In certain cases the metal band cut through and lay within the vessel; and in one or two cases a semilunar diaphragm formed within the aorta. Contrary to the experimental findings of Lister, no endothelial proliferation took place.

The Blood Pressure in Different Parts of the Arterial Tree.—Dr. Dawson reported a study of this subject which was undertaken to determine the changes undergone by the systolic, the diastolic and the mean pressures in passing from the heart to the periphery. The aortic-cephalic, the aortic-brachial and aortic-femoral systems of the dog were studied—a canula being introduced into the aorta and then into the successive parts of each of these systems moving toward the periphery. The various blood pressures were read in each of these situations. An unexplained initial rise occurred near the heart—the pressure measured at a point nearest the heart being slightly lower than at a point a little distal to that.

Heart-Block in Mammals.—Dr. Erlanger reported experimental work done in regard to heart-block in mammals. Complete heart-block was said to be present when the auricle and ventricle were beating with two independent rhythms and, though a well known phenomenon in coldblooded animals, had never been produced in the mammals. Dr. Erlanger's experimental work started with a study of a case of Stokes-Adams disease in the Johns Hopkins Hospital. It was found, by careful pulse tracings, that the auricle and ventricle in this patient were beating with differing rhythm. The administration of atropine had the usual effect on the auricular beat; but the ventricular beat did not change, the ventricle being thus shown to be uncontrolled by the vagus. The accelerations were, however, shown to be acting in both auricle and ventricle. During the attacks the ventricles stopped but the auricles continued to beat, and all these phenomena led Dr. Erlanger to the conclusion that the Stokes-Adams disease was ultimately heart-block. He then set about trying to produce this condition in dogs, and was finally able to accomplish this by placing a specially devised hook-clamp between the auricle and ventricle and compressing with it the auriculo-ventricular muscle bundle of His. The study of the case and the further experimental work on dogs showed conclusively that every case of Stokes-Adams disease (the rhythm in the neck vessels different from the rhythm at the heart, being one of the features described by Stokes) was in reality an instance of heart-block, and a study of all the cases in the literature which have been well observed and by adequate methods confirmed this idea. All the symptoms, Dr. Erlanger said, could be explained by a lesion of the auriculo-ventricular bundle of His and there seemed to be neither need nor warrant for calling in the cardiac nerve centers to explain the condition.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, held February 22, 1905.

The President, James M. Anders, M.D., in the Chair.

The Pasteur Treatment for Rabies Administered at the Patient's Home.—Dr. Myer Solis-Cohen in this paper said that the treatment might be administered at the patient's home, and reported the following case: A man and his son were bitten by a dog whose medulla and plexiform ganglia showed the cell changes diagnostic of rabies. They were given the Pasteur treatment at their home, the virus being mailed by special delivery each day by the Pasteur Institute of the Department of Health of New York City. On its arrival the virus was put on ice, and as soon after as practicable was injected with aseptic precautions into the subcutaneous tissue of the abdomen. The patient's bowels were kept open and alcoholic excesses were avoided. There was no constitutional disturbance, and no interruption of the daily work. On but two occasions did the treatment cause a local reaction, which, however, responded to antiseptic measures. Two weeks after the cessation of all treatment no symptoms of rabies had developed. The patients consequently were considered out of danger. Dr. Cohen concludes from such a case that a person when bitten by a rabid dog need not necessarily go to a Pasteur institute for treatment, but, if within a day's journey of one, may be supplied daily with the virus, which can then be injected by the family physician with apparent success.

Dr. Ernest Laplace referred to his privilege of working with Pasteur in 1885 and 1886 in his experiments upon that which has resulted in an absolutely preventive treatment of hydrophobia. Pasteur never made a diagnosis of hydrophobia unless a piece of the brain or spinal cord of the dog were injected into the rabbits and they died of hydrophobia. Dr. Laplace does not advocate the adoption of this method, but believes that for the scientific value of the treatment it is not well to be satisfied with this inoculation. Although the germ of hydrophobia has not been found, Dr. Laplace believes that the treatment is based upon a scientific foundation. That the poison exists is undeniable, for it can be produced and reproduced, attenuated, and made more and more virulent at will; and more can be done

with the poison than with any other, except that of anthrax. Pasteur's idea was to produce in a patient with dog hydrophobia, which requires three weeks for development, a tolerance with the rabbit hydrophobia, which is more virulent and takes only ten days to develop. The pains alluded to in Dr. Cohen's case he thought due to local causes. If treatment can be carried out at home he regards it as a step of great worth to medicine in general. The moral effect upon a patient leaving home in a desperate rush for treatment he considers very bad.

Dr. William M. Angeny referred to a patient bitten by a supposedly rabid dog, who was sent to New York for the first two days' treatment, and after which time the virus was sent to Dr. Angeny for use.

Dr. G. Morton Illman thought it strange that there should not be an admission of the diagnosis of hydrophobia, since the condition is proven by inoculation and is rapidly becoming associated with a definite pathology. In human beings there are distinct changes in the ganglion cells and the medulla. With such a complete Board of Health he thinks Philadelphia should have a laboratory in which this treatment could be carried out.

Dr. Cohen, in closing, said that in the question of whether or not a dog had rabies, if the head only were taken to the pathologist of the Live Stock Sanitary Board of Pennsylvania a report would be given on it.

Surgical Intervention in Cases of General Peritonitis.—Dr. Joseph Price said that the profession had been slow in accepting the overwhelming evidence of operating and clinical facts. A few of the early surgical obstructionists, however, are now the most aggressive and persistent advocates for early surgical intervention in abdominal traumatism and pathology. With the present precise knowledge of pathology and diagnosis he believes there is no excuse for delay in operation. Surgical intervention for peritonitis and perforated ulcers was suggested during the seventeenth, eighteenth and nineteenth centuries, but nothing of a positive nature was done until about 1878. Embolism of large and small mesenteric vessels, he believes, has not yet received deserved attention. Any variety of peritonitis or infection should be anticipated surgically. From a long experience he believes that about all the sufferers from perforations in and about all the viscera in the peritoneal cavity, typhoid perforations, suppurative, gall-bladder, gastric and duodenal perforations should be saved. It is the soiling of walled-off cavities Dr. Price believes dangerous and unreliable. The possibility of peritonitis remaining local or circumscribed by adhesions should not be considered if diagnosis of perforation has been made. Firm, pure silk he regards as the best suture material and the interrupted sutures as giving the best results with less risk of strangulation. If the margins of the ulcer are ragged they should be trimmed. A resection, he states, is unjustifiable. The irrigation should be a thorough cleansing with sterilized water of the entire surface. It is his impression that irrigation with hot normal salt solution is harmful, causing irritation. Curetting or wiping dirty points with gauze is followed by good results. The gauze pack, as so commonly and recklessly used, he regards as a dangerous procedure. Two typical cases were cited and the plea made for early diagnosis, early surgery and for more thorough toilets to arrest peritonitis and sepsis.

Dr. Ernest Laplace said that cases of peritonitis die because of their coming too late to the surgeon. This he thought was more often the fault of the physician than the patient. Two distinct problems in Dr. Price's paper, he said, were peritonitis as produced by perforating typhoid ulcer, and diffuse peritonitis from other causes. An important point of difference between the two is that when a typhoid fever ulcer perforates the contents of the intestines that flow into the peritoneal cavity it is largely harmless at the time, as it requires a little while for the germs to become pathogenic. If such a case gets well the poison was local. It is quite a different thing to treat a foul peritonitis resulting from a gangrenous appendix or from the rupture of an appendical abscess that has gradually leaked into the abdominal cavity. The abscess cavity in particular and the peritoneal cavity in general, he believes, are best cleaned out with sterile water. The much-vaunted saline solution, he thinks, is objectionable on account of its irritating effect. The cleansing of the abdominal cavity should be continued as long as it is possible without detriment to the patient, and to effect this he carries out a plan of repeated irrigation. Temperature and pulse records, while valuable with reference to shock, give no indication of the necessity for operation. Operation should depend upon the general appearance of the patient. In washing out the abdominal cavity he avoids the use of gauze, using rather the smooth surface of glove or bare hand. While idodoform gauze is a great power for good in some wounds, in some it causes increased inflammation. If used at all it should cover only the spot that was the seat of the abscess, and should be separated from the rest of the cavity by the plain gauze.

Dr. John H. Gibbon does not believe the diagnosis of typhoid perforation easy, and he regards it as a great mistake to wait for the typical symptoms of perforation before the surgeon is called in. The most valuable symptoms to the surgeon in his opinion are localized pain and rigidity coming on suddenly. He agrees with Dr. Price that resection is hazardous. Anchoring the bowel, surrounding it with cofferdams of gauze, he believes is the best method. The element of time he regards of the utmost importance in these operations. In localized peritonitis he believes that thorough drainage is better than thorough irrigation, but generalized peritonitis demands complete irrigation. Admitting that salt solution may give pain when applied to the peritoneum he yet believes that it does do good.

D. B. F. Baer's experience with salt solution does not agree with that of Dr. Laplace. He has used it for the last few years and believes it nourishes the patient by filling the blood-vessels. There are less apt to be adhesions and the skin is in a better condition on account of the effect of the salt solution upon the kidneys.

Dr. Laplace explained that he said he believed salt solution would irritate in general peritonitis where from the washing there could only be expected a cleansing effect, and where the amount of the solution was insufficient to prove an antiseptic.

Dr. Edmund W. Holmes thought surgeons should agree that the four symptoms of pain, localized tenderness, abdominal rigidity and some interference with respiratory action are indications for operative interference.

Dr. R. P. McReynolds thinks the diagnosis in typhoid perforation particularly difficult. In general peritonitis from gonorrheal infection he sees no reason for operating in the acute stage. The temperature comes down to normal if the patients are kept in bed, given hot douches and treated by the expectant method. After this the pus tubes may be removed and the abdomen closed without drainage.

Dr. Price, in closing, said that no progress in medicine

had pleased him more than that of the modern clinician in the question of diagnosis. It is his experience that often the rural practitioner will make a more refined and accurate diagnosis than he personally is willing to make. In the packing of gauze too often there results bowel pressure. It should be placed not too low down, and not packed upon viscera paralyzed by peritonitis and overdistention. The cases of peritonitis which he fears the most are those of enormous distention. With reference to waiting for recovery from collapse, or for reaction practised by early operators, Dr. Price believes surgery to be a very good treatment for shock.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

Stated Meeting, held March 17, 1905.

Dysentery of Children.—Dr. J. H. M. Knox showed the pathological specimens of some children who had died with severe forms of this condition. So-called "summer-complaint" included, he said, three groups of cases; (1) intestinal indigestion, following a gross dietary indiscretion; (2) gastro-intestinal intoxications, in which nausea, vomiting and toxic features were prominent; (3) enteritis or ileocolitis, in which marked membranous ulcerative or other lesions were present. The first specimen was from a child who had an ordinary dyspeptic diarrhea with mucoid stools. After a time blood began to appear in the movements and nausea and vomiting became marked. There was also fresh blood in the vomitus, though the lungs were negative. The course was down hill and death occurred in asthenia. Widal had been negative. At autopsy discrete, punched-out ulcers were found throughout the intestine but ceasing entirely above the ileocecal valve. Cultures for typhoid and for dysentery bacilli were negative. The second patient was a baby of three months, who was admitted in collapse from some gastro-intestinal trouble. Some improvement followed treatment but death soon occurred in asthenia. Marked pyuria had been present and great numbers of colon bacilli were found in the urine. Autopsy showed caseous glands at the base of the lung and tubercles on the pleura. Three feet above the ileocecal valve was a pseudomembrane lining the entire gut, from which dysentery bacilli were obtained. The third patient had had mucoid stools for several weeks and at autopsy showed a membranous leitis from which dysentery bacilli were obtained. In the fifth case dysentery had been present for two weeks, the stools showed tubercle and dysentery bacilli and there were signs in the lungs. The bowel showed undoubted tuberculous ulcers besides others in the sigmoid and rectum thought to be probably dysenteric.

Hyperpyrexia in an Infant.—Dr. Mitchell reported this case. The child had been born healthy and was put at the breast, the mother, however, failing to lactate. On the third day the child's temperature was 100° F. on the morning of the fourth day 103° F., and that evening 106.6° F. In absence of the other signs a diagnosis of inanition fever was made and under milk feeding and baths the child made a good recovery. The moral of the case was that whenever a breast-fed child shows inexplicable fever inanition should be thought of.

Measles in an Infant.—This patient, reported by Dr. Mitchell, showed fever, coryza (lacrimation) and râles on the seventh day after birth, and a few days later a typical measles developed, without Koplik's spots. Infection probably developed on the day of birth and was pretty definitely traced to a shawl in which the child was wrapped and which had been used on a measles patient nine months previous.

Rheumatic Purpura.—Dr. Watson briefly reported three cases of this disease occurring in a single block. Dropsical symptoms were present in all.

BOOK REVIEWS.

THE DISEASES OF SOCIETY AND DEGENERACY. By G. FRANK LYDSTON, M.D. J. B. Lippincott Co., Philadelphia and London.

THE title which Dr. Lydston has given his book implies a wide range of subject, an implication abundantly fulfilled. In these days when the social idea is so prevalent, the qualifying phrase "of society" appended to a noun is rather expansive than limiting. Consequently we need feel no surprise to find a book with this inscription comprising studies in evolution, criminology, psychology and everythhing else that can be considered as bearing on the problems which menace society.

The author has collected a large quantity of data on his subject or rather subjects, both from observation and from literature, and has presented it with a literary style which is strikingly vivid, and, if the adjective be not out of place in so serious a subject, entertaining. No doubt it is inevitable that one who feels as strongly as Dr. Lydston evidently does on these matters and has at the same time the gift of swift epigram, rounded period and thrilling climax should use them lavishly; but although his handling certainly makes the book attractively readable, one is tempted to question whether its ultimate effectiveness might not have been furthered by a rather different tone. These matters need thinking of, certainly, doubtless also need talking of as a fruit of the thinking and an aid to further thinking, but both thinking and talking need a dispassionate and judicial attitude, and even while we feel ourselves swayed by brilliant rhetoric we distrust, perhaps unjustly, its deftly phrased and confident conclusions.

THE OPEN-AIR TREATMENT OF PULMONARY TUBERCULOSIS. By F. W. BURTON-FANNING, M.D. Cantab., Physician to the Norfolk and Norwich Hospital, Honorary Visiting Physician to the Kelling Open-Air Sanatorium. Cassell and Company, Ltd., London, Paris, New York and Melbourne. W. T. Keener & Co., Chicago.

THIS little volume has on its title page a quotation from Sir Thomas Brown, the distinguished author of the Religio Medici, which serves to show very well how long ago thinking men more than suspected that the open-air treatment of tuberculosis was the ideal. In a letter to a friend, Sir Thomas said:

"Some think there were few consumptives in the old world, when men lived much upon milk; and that the ancient inhabitants of this island were less troubled with coughs when they went naked and slept in caves and woods, than men now in chambers and feather beds." This quotation is an excellent index of the suggestive value of this volume. There is scarcely any phase of the subject of pulmonary tuberculosis threadbare, though it apparently has been worn by writers in recent years, which does not take on an air of newness under Dr. Burton-Fanning's hands. Even the most veteran advocate of modern phthisio-therapy is sure to find something of value in the reading.